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Textile World

AUGUST, 1956

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Textile Engineering
CAUSTIC RECOVERY

Caustic recovery in large-volume operations is rapidly proving its worth by reclaiming a major portion of all caustic waste.

An ever-increasing number of textile leaders have found it profitable to reclaim caustic while solving the problem of industrial waste treatment. Robert and Company Associates have helped install this process in a number of plants.

The profit potential in caustic recovery has proven its value to many in the bleaching and finishing field. An engineering survey of your caustic operation may be the first step in solving your problem.

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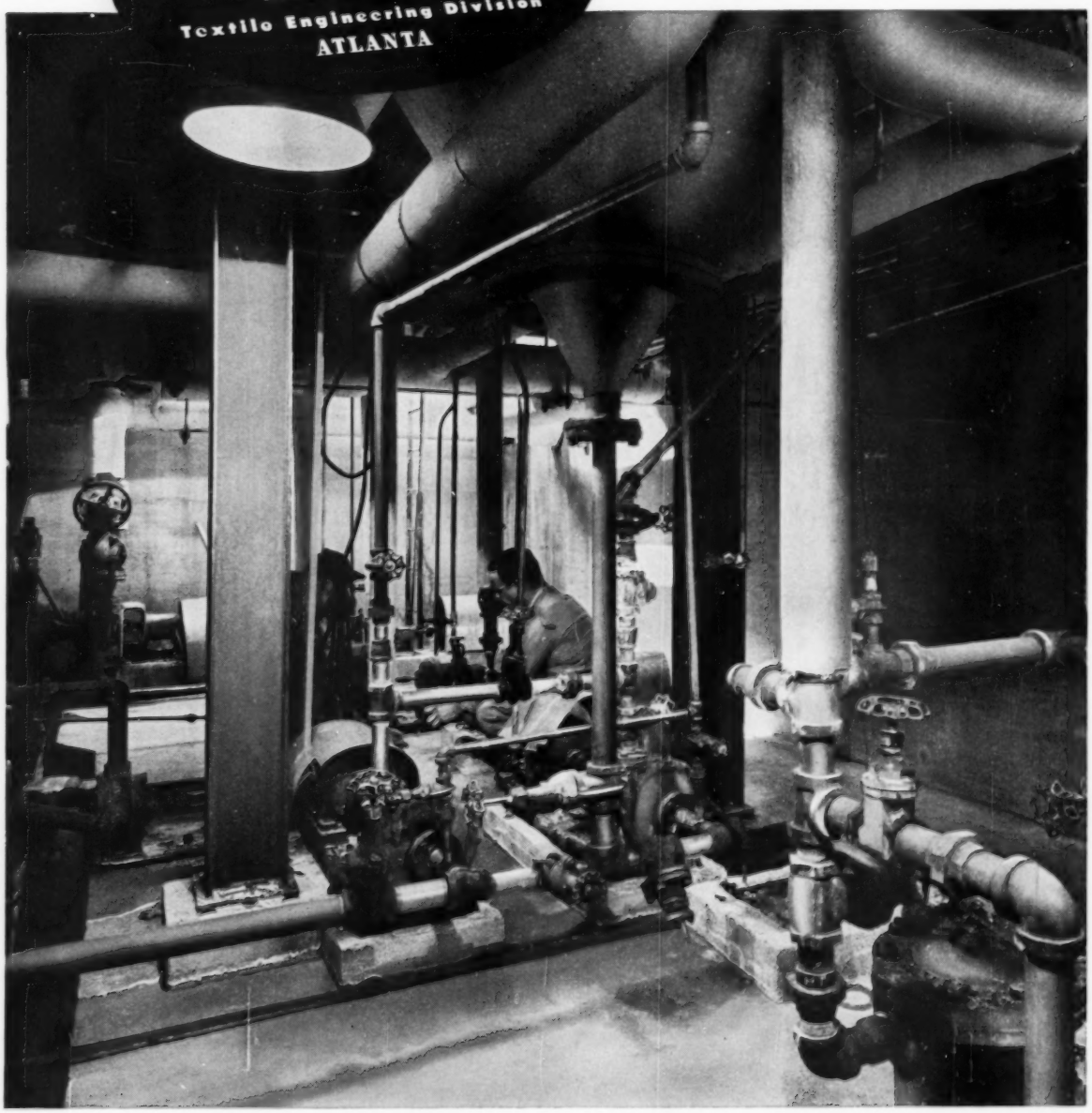

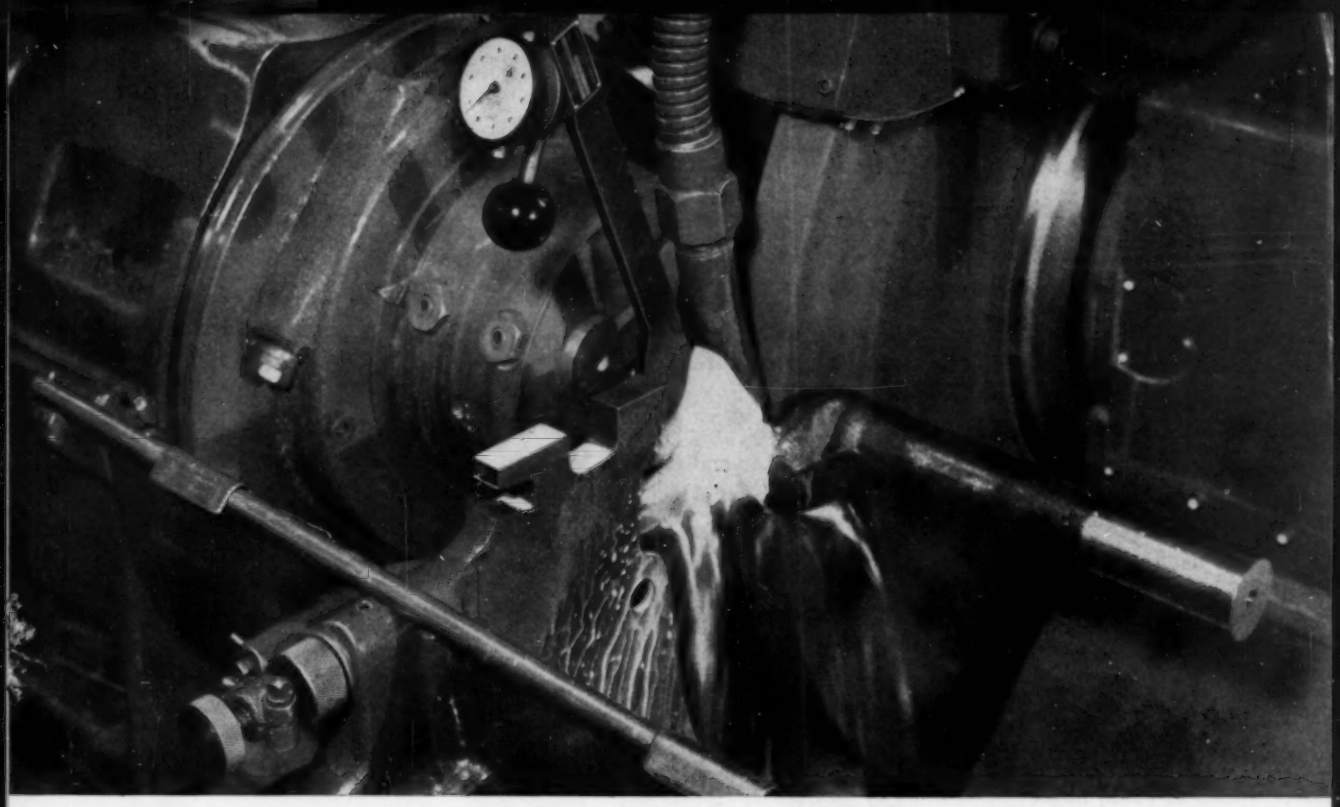

NOW . . . "MICRO-FINISHED" LOOM CRANK SHAFTS

"Micro-Finished" Loom Crank Shafts, a product of Draper Corporation, assure you of improved loom performance. New manufacturing methods and special machinery result in a superior crank shaft—*with a higher degree of accuracy and uniformity.*

Each Crank Shaft, like all Draper products, is manufactured to give longer, trouble-free service.

Whatever your loom requirement, when you specify Draper, increased loom efficiency, production, and profits will result.

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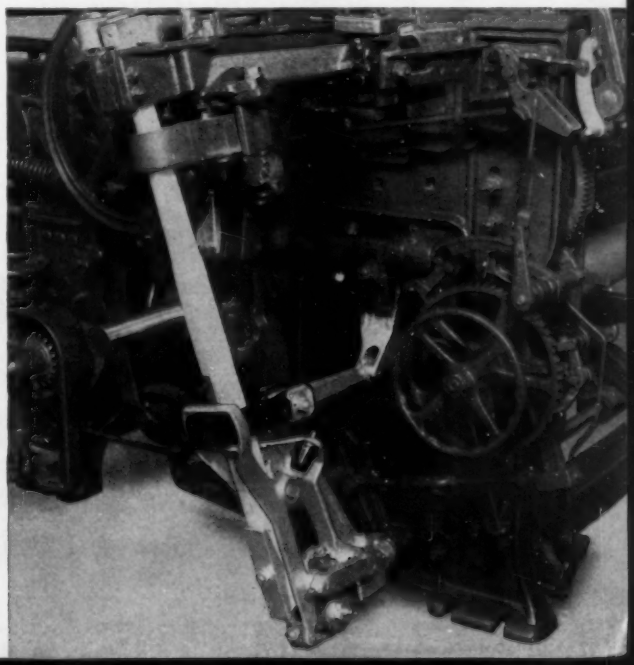
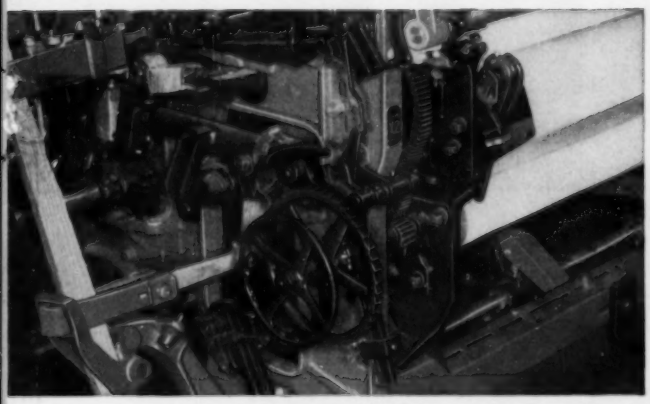
LINKAGE PARALLEL ASSEMBLY improves loom operation—cuts maintenance cost





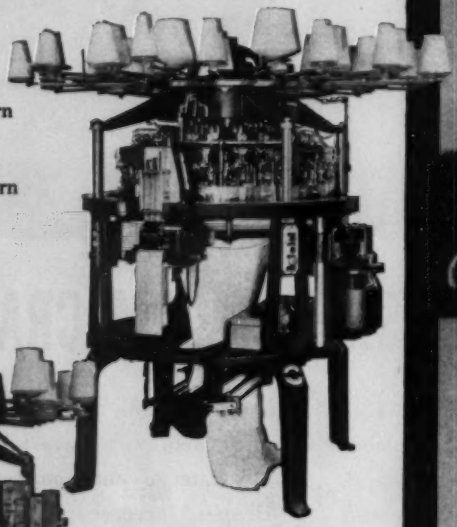
HIGH ROLL RATCHET TAKE-UP for X-2 increases loom versatility

the world's largest manufacturers of circular jacquard knitting machinery

Unlimited Versatility with CIRCULAR JACQUARD

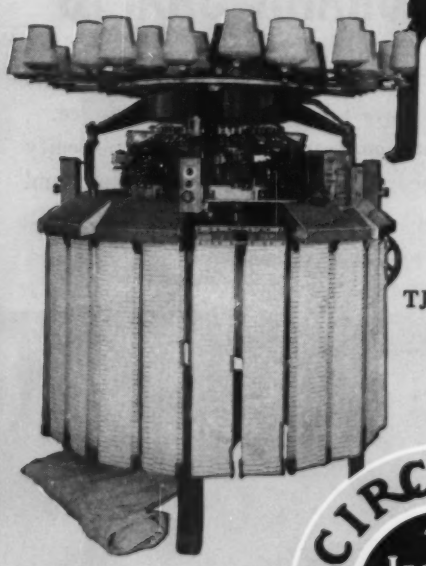
Ability to meet changing fashion demands has made the Jacquard Knitting Machine Co., Inc. the world's foremost manufacturer of Circular Knitting Machines.

The *new* TAI-24 is a 32″ diameter, 24 feed, fully automatic, multi purpose Interlock, Plain Transfer and Rib Knitting machine . . . features a new two-speed vertical drive slide, three roller take-up and dogless head construction.

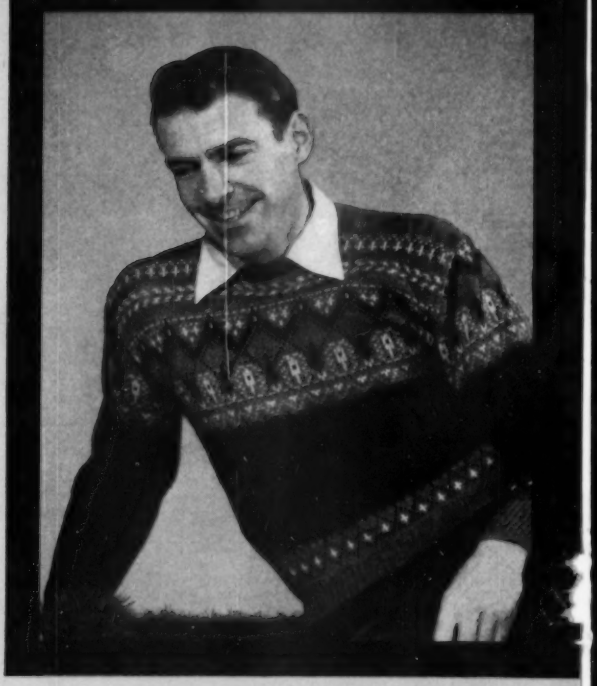


TAI-24

The TJI-12 has a greater pattern range than any other circular knitting machine. Knit-on cuffs are a quality feature and pattern cards permit any design, regardless of width, length or placement.



TJI-12



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A variety of modern, high speed machines are available for all types of knitted outerwear. Be wise . . . standardize on 'Circular Jacquard' knitting machines.

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Textile World

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Developments To Watch

JAPANESE IMPORTS . . . offer a greater threat than ever to the American textile industry. Imports of cotton cloth, excluding velveteen, are now at the rate of 244-million square yards annually, 700% greater than in 1953. Imports of specific fabrics have increased in even more drastic fashion.

For example, nearly 6-million square yards of velveteen came in during 1955, a 2,000% increase over 1953. Based on first-quarter shipments of 1956, gingham imports will amount to 121-million square yards this year, an 1,876% increase over 1954. U. S. imports of finished sheets and pillowcases were up 1,382% in 1955 over 1953, and wearing apparel is expected to show an increase of 3,000% this year over 1953 and 1954.

RAYON AND ACETATE STANDARDS . . . will undergo a revision because of advances in technology, reports the American Standards Association. The synthetics standards, L22, will be merged with the general textile standard, L25. The combined project, designated L22, will cover specifications, test methods, performance requirements in terms of end uses, and the development of labels and tags.

SUPIMA COTTON . . . may soon replace foreign long-staple quality cotton. During the last 12 months, more than 80% of the crop moved into market channels without benefit of Government subsidies. In addition, the Commodity Credit Corp. sold 30,000 bales out of storage.

SURPLUS COTTON . . . may eventually be shipped to European Red satellite countries under a proposed bill approved by the House Agricultural Committee. Sales would not be for foreign currency but would be on a barter basis. Soviet Russia, Red China, and North Korea are not included in the proposal.

DACRALON . . . a new, lightweight synthetic coated fabric, will be used in Arctic regions for radar shelters. Developed by the Air Force Research and Development Command in conjunction with DeBell & Richardson, Inc., the new fabric is made of Dacron coated with Hypalon, a chloro-sulfonated polyethelene elastomer. Properties are light weight, high strength, resistance to sunlight and ozone ageing, and electrical characteristics that permit transmission of microwave energy to and from targets.

CELLULOSE ACETATE FIBERS AND YARN . . . will be produced in Japan by Celanese Corp. of America. Initial production is expected to be 6-million pounds annually. The plant will be built jointly by Mitsubishi Rayon Co. Ltd. and Celatina S.A., a wholly owned subsidiary of Celanese. Celatina, with a minority interest in the company, will provide technical assistance through licensing its processes.

WOOL FABRICS . . . made with permanent pleats, and by new shrinkproofing techniques and new dyeing methods may soon be on the market to give wool some of the special advantages claimed by man-made fibers, according to Dr. Gerald Laxer, Wool Bureau.

CONVEYOR BELTS . . . will soon be transporting red-hot pieces of metal in foundries. Made from glass fiber and rubber, the belts resist heat that would burn right through conventional belting. B. F. Goodrich Co. is the manufacturer.

NEOPRENE-COATED FABRICS . . . may be joined in the future by cement-seaming instead of conventional sewing in the fabrication of tarpaulins, rainwear, and other waterproof products. Developed by du Pont technicians, the seaming process is not as fast as sewing but does a better job of forming a waterproof seal without the use of tape.

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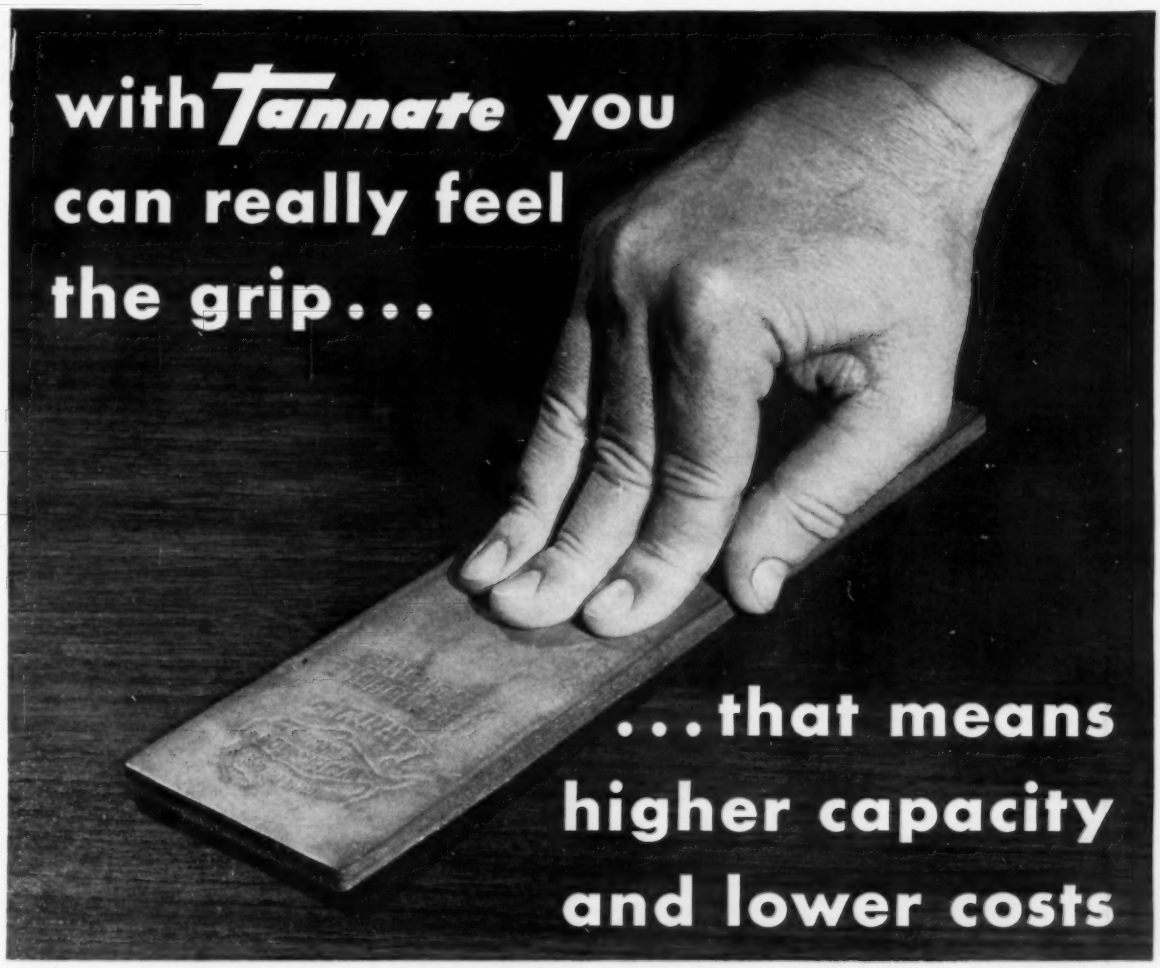
with Tannate you can really feel the grip...



...that means higher capacity and lower costs

Take a piece of Tannate Leather Belt and compare its grip with any ordinary Belt.

Place this sample (we'll be glad to furnish you one) on your desk. Press down firmly as you slide it along and see how well it grips. This same glove-like grip means extra capacity on your drives. As you know, extra capacity usually means additional production, longer life, and less maintenance. This is just one of the many features that are the result of Rhoads special tannage . . . a tannage combining in one belt all the qualities most important for flat belt transmission of power.

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Please send me a sample of Tannate Belt. No obligation, of course.

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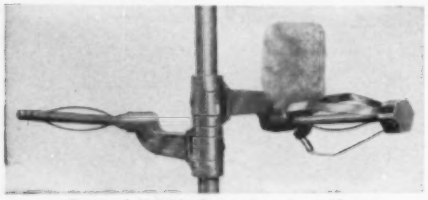
FLEXIBILITY IN HANDLING PACKAGES

VERSATILITY WITH WIDE RANGE OF PACKAGE STYLES

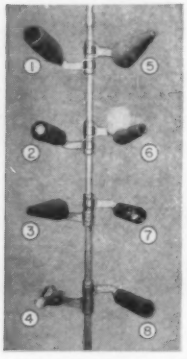


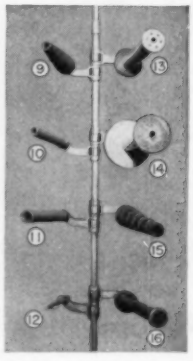
Patented McBride Swing Arm Assembly.

The Bowed Spring Spindle is tilted upward to a 5° angle to prevent packages from working loose. Arm swings out for package change, snaps back in running position into an indented, hardened steel collar by means of an internally contained ball type spring lock. Sheepskin pad (optional) mounted on swinging arm behind cone holder presses against back of cone (rayon, silk, nylon, etc.) and prevents yarn from dropping behind package.

Quik-Change Cone Holder

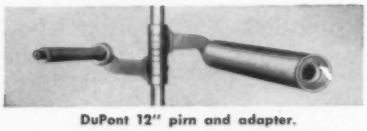
Quik-Change Cone Holder rotates to facilitate tying of transfer tails. Completely rustproof, of sturdy construction, it greatly reduces changeover time from cones to tubes — of vital importance in creels of large capacity. No set screws. Just press thumb release to remove. Snaps back on.



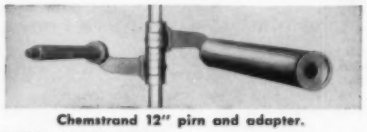


♦ QUIK-CHANGE CONE HOLDER mounted on Bowed Spring Spindle accommodates many packages including: 1. Large diameter metal dye tube; 2. Headless package; 3. Perforated cone; 4. Quik-Change Cone Holder; 5. Cotton cone; 6. Rayon cone; 7. Large diameter fiber dye tube; 8. Large diameter parallel shipping package.

BOWED SPRING SPINDLE ♦ with Quik-Change Cone Holder removed accommodates many packages including: 9. Wooden cone; 10. Fiber shipping tube; 11. 10" nylon pirn; 12. Bowed Spring Spindle; 13. Bakelite throwing bobbin for nylon; 14. Maple throwing bobbin for rayon; 15. Wooden cone for carpet yarns; 16. Woolen twister bobbin.



DuPont 12" pirn and adapter.



Chemstrand 12" pirn and adapter.

FLEXIBILITY WITH NYLON

The Bowed Spring Spindle and Quik-Change Cone Holder will handle a wide variety of packages—few adapters are needed with McBride equipment but they are available to meet special problems.

Mills warping nylon often must change from DuPont pirn to Chemstrand pirn and back. This hard maple pirn holder will accommodate both, eliminating the time needed to mount a special adapter for either pirn.

LET McBRIDE STUDY YOUR WARPING SITUATION. YOU MIGHT BE SURPRISED WITH THE COSTS YOU CAN SAVE, THE IMPROVED QUALITY IN THE WARPS YOU PRODUCE.

***CREELS for every purpose,* CONE HOLDERS, STOP MOTIONS, TENSION CONTROLS, WARP BEAMS, FLANGES, CARPET INSPECTION TABLES, METAL AND WOOD ROLLS.**

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DEVELOPMENTS TO WATCH

CRESLAN . . . American Cyanamid's acrylic fiber, first called X-51 and then X-54, will find a market in fleeces, blankets, simulated-fur fabrics, suitings, overcoatings, and industrial fabrics, the producer thinks. Pilot-plant fiber is now available for experimental purposes. Full-scale commercial production is expected late next year.

WOOL RESEARCH . . . will be increased in 1957. Expenditures in 14 wool-producing countries will be doubled, and budgets for wool promotion will be increased substantially. The American Sheep Producers Council recently appropriated $1.4-million for promotion during the fiscal year.

NYLON STOCKINGS . . . made from yarn with a triangular or elliptical cross section may help hosiery manufacturers seeking new ideas. The modified cross section alters the fabric appearance and tends to produce a glitter effect rather than a dull appearance.

CREASE-RESISTANT LINEN . . . could increase the market for Irish exports. Tootal Broadhurst Lee Co. Ltd. has developed a finish that puts linens into the minimum-care field by improving crease resistance and reducing the amount of ironing necessary after washing.

FABRIC-AND-RUBBER SIDEWALKS . . . that move will see more use in the future. Four passenger-carrying belts are already in operation. Under consideration are other projects, such as passenger-car conveyors to replace shuttle trains and overhead moving sidewalks in downtown shopping centers.

WOOL COMING BACK? . . . "Yes," says T. B. Nilsen, president,

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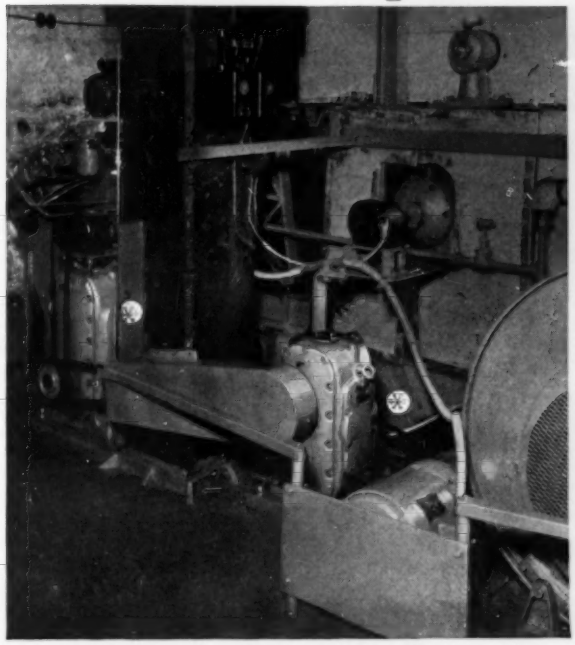
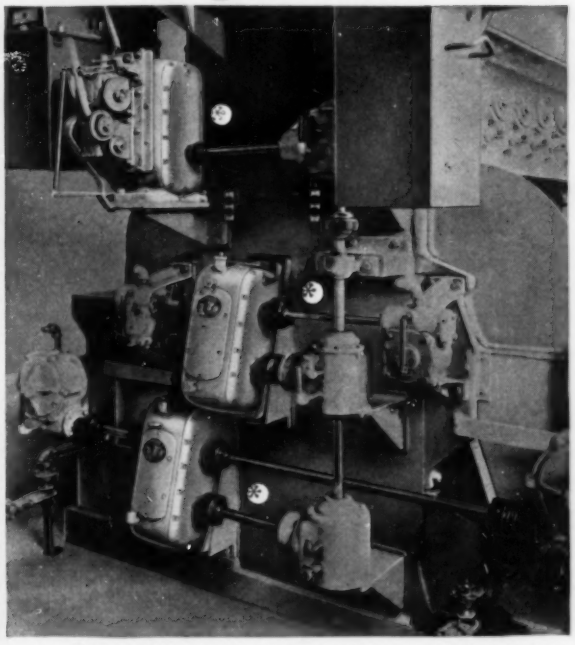
Coarse jute to fine rayon . . .

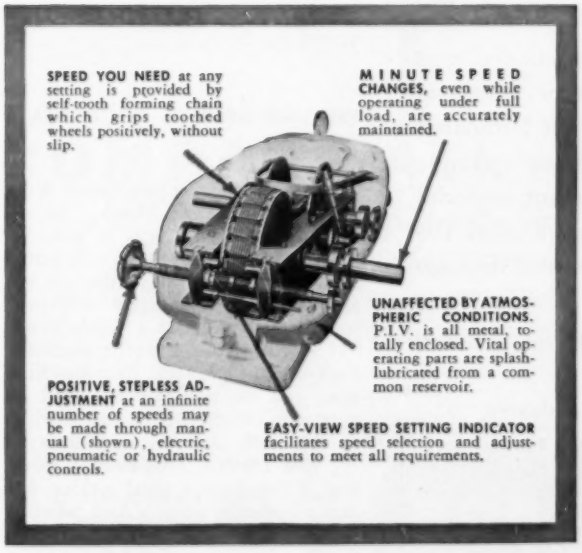


P.I.V. drives and electronic control regulate speed of winding over 3600 ends on jute slasher beam by control of moisture content of material and accumulating diameter of beam.



On 128-spindle rayon pot spinning machine, one P.I.V. maintains speed of viscose metering pumps. Two others drive godet wheels whose difference in speed determines denier of thread.

IT'S P.I.V.
for instant variation
through a complete range of positive speeds


SPEED YOU NEED at any setting is provided by self-tooth forming chain which grips toothed wheels positively, without slip.
MINUTE SPEED CHANGES, even while operating under full load, are accurately maintained.
UNAFFECTED BY ATMOSPHERIC CONDITIONS. P.I.V. is all metal, totally enclosed. Vital operating parts are splash-lubricated from a common reservoir.
POSITIVE, STEPLESS ADJUSTMENT at an infinite number of speeds may be made through manual (shown), electric, pneumatic or hydraulic controls.
EASY-VIEW SPEED SETTING INDICATOR facilitates speed selection and adjustments to meet all requirements.

Stepless, non-slip — operates independent of friction

VARIABLE for any speed, positive at all of them—Link-Belt P.I.V. accurately delivers required horsepower from maximum to minimum settings. Turn a hand-wheel . . . push a button . . . or utilize fully automatic controls. The self-pitching chain drive will engage radial-grooved conical wheels at the exact diameters required for precise output-speed delivery.

This positive chain drive—independent of friction—accounts for the unmatched accuracy of P.I.V. at all loads. Moreover, that efficiency is maintained throughout extended service life.

Your nearest Link-Belt office or authorized stock-carrying distributor will assist your selection from 8 sizes and 16 types. You can also get full data by writing for Book 2274.

P.I.V. LINK-BELT VARIABLE SPEED DRIVE

LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office: New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville, N.S.W.; South Africa, Springs. Representatives Throughout the World. 14.072

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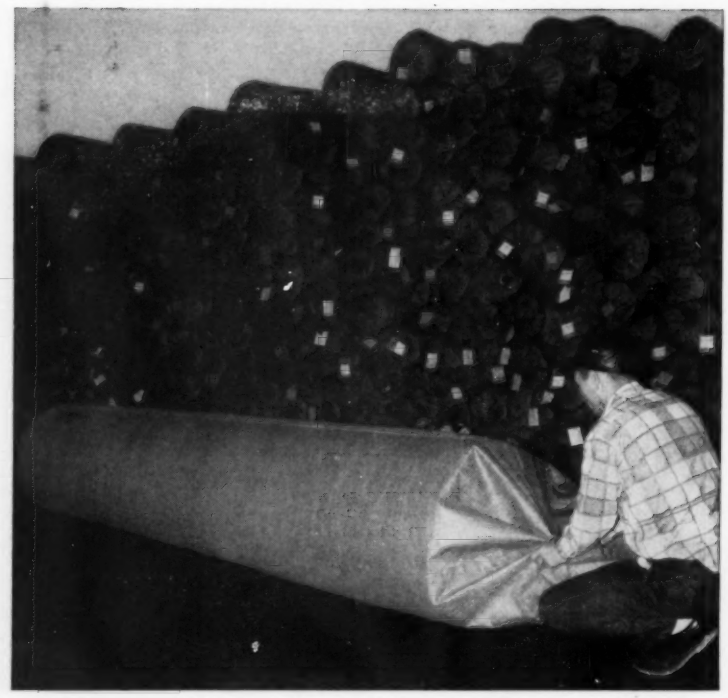

Bemis Covers are fast and easy to use. A latex adhesive is brushed through the pores of the uncoated burlap overlap, forming an especially strong seal. Then the ends of the cover are wire-tied. That's all there is to it.

Bemis Laminated Shipping Covers will save you labor–time–money and protect your carpets and rugs

Sturdy Bemis Laminated Covers for shipping carpets and rugs are quick and easy to apply . . . so you save labor, time *and* money. The laminated material (burlap and paper laminated with asphalt) comes in sheets or rolls, so you save valuable storage space. The puncture- and moisture-resistant material gives special protection to your carpets and rugs. And the covers fit so snugly that the roll can't telescope and damage the tuft and pile.

Ask for *details* of the benefits you get from Bemis covers.

Bemis Products for the Carpet and Textile Industry

Laminated Sheets • Laminated Yardage • Laminated Tubing
Tite-Fit Tubing • Paper Rug Covers • Burlap Piece Goods
Wire Ties and Tying Equipment

Bemis General Offices—St. Louis 2, Mo.

BEMIS BAG CO.

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BUTTONED-UP MINDS

Dear Editor:

One of the first things I looked at upon my return from a vacation was your May editorial on "Where Supervisors Fail."

Just in case a few buttoned-up minds descend upon you, I would like to tell you that there are a lot of people around, at least in my organization, who could not more heartily agree with what you had to say. This kind of frank and honest calling of the shots is certainly in the finest tradition of American journalism, and we all ought to be grateful for a publication that is strong enough to speak out freely without fear of reprisal.

The thing that really got me is the fact that supervisors in the group are not the only ones who are guilty of stubborn resistance to change. I think this is the malady a lot of us in management also suffer from at times. Maybe I ought to paste that editorial inside my hat when I am making the rounds of my customers and prospective customers.

L.V.R.

Greenville, S. C.

PEGGING GEARS IS GOOD IDEA

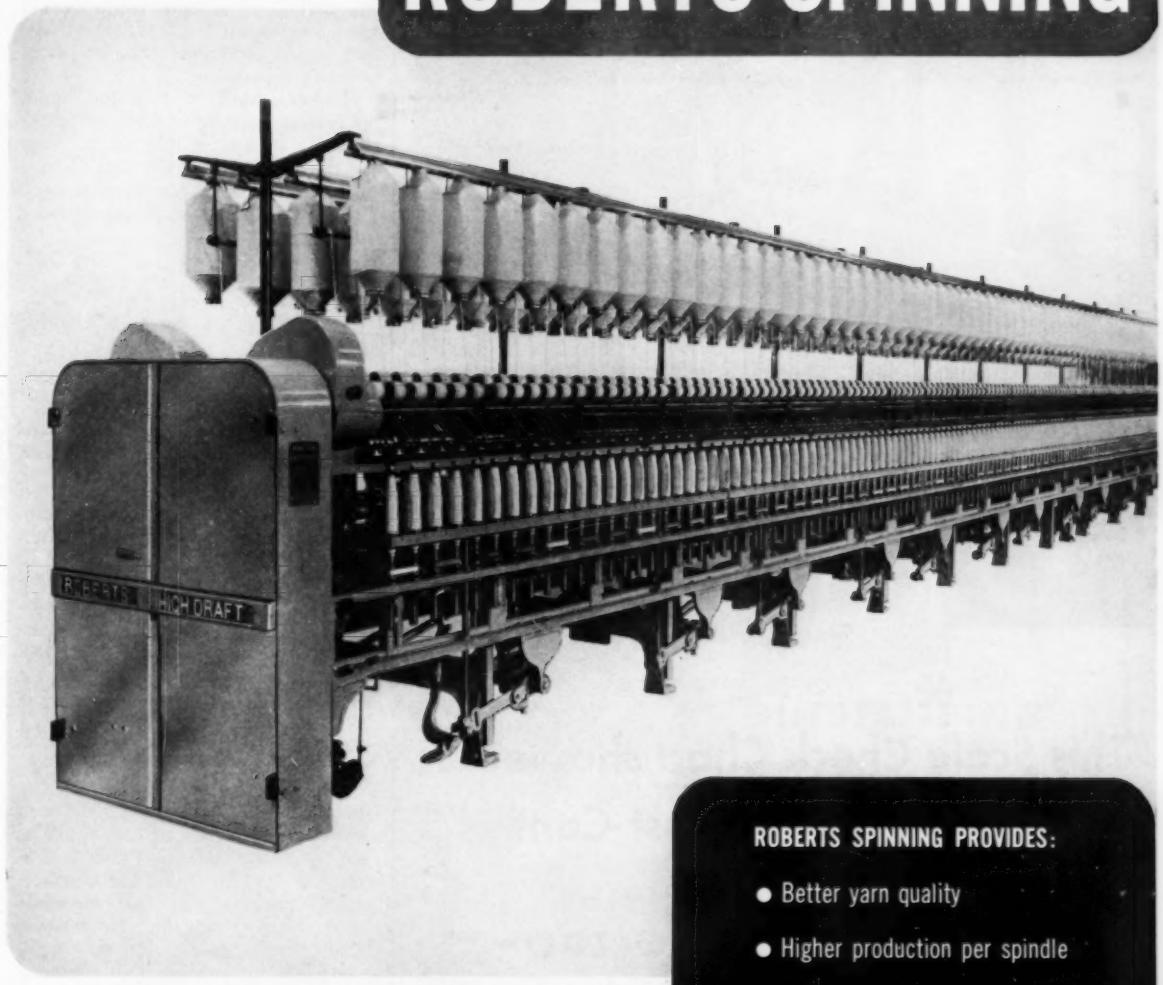
Dear Editor:

I was glad to see your recent Kink [TEXTILE WORLD, March, '56, p. 160] about putting pegs in gears instead of scrapping them. When I first came to Southbridge, the mill was throwing away 268-T gears and twist intermediate gears if a tooth broke.

I suggested to the master mechanic that we put pegs in, like the Kink says; and we did that up until 10 years ago, when we started welding in the teeth and finishing them on the gear cutter. This method works fine if you have a good welder, but not everybody does. And when a welded tooth broke, four or five would usually go also before the spinner could stop the frame.

CONTINUED ON PAGE 10

ROBERTS SPINNING



ROBERTS SPINNING PROVIDES:

- Better yarn quality
- Higher production per spindle
- Increased package sizes
- Lower maintenance expense
- Lowest first cost

COMPARE ALL 3

For high production, top yarn quality, large packages, low maintenance expense, dependability—and, at the lowest investment per spindle – Roberts Spinning is second to none in America today.

Available in 39 inch, 36 inch and the new Roberts 25 inch width Frames.

All standard features used on Roberts Spinning Frames can be adapted as Changeovers to your existing frames.

2 ¼ MILLION SPINDLES

In Changeovers and complete Frames–Roberts Spinning has been overwhelmingly accepted by American mills – over 2¼ million spindles now equipped with ROBERTS HIGH DRAFT.

ROBERTS COMPANY

SANFORD, NORTH CAROLINA

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"This Scale Check Chart showed us how to get Better Cost Control"

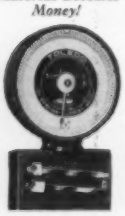
It's New from TOLEDO— send for yours today!

Your scales are a vital element in effective cost and quality control. Errors in weighing go all the way through accounting and affect cost . . . profit . . . or loss! You need to look at *all* your weighing today . . . not as isolated scales, but as a *weighing system.*

Toledo's new Scale Check Chart will show you quickly and accurately how well your scales are serving you, and provide the information you need for truly effective cost control.

This new Check Chart is yours for the asking in a handy kit that contains all you need for an easy, informative appraisal of weighing in your plant. Send for it today. Address Toledo Scale Company, 1409 Telegraph Rd., Toledo 1, Ohio.

On Your Scales . . . Material Becomes Money!



TOLEDO®
HEADQUARTERS FOR SCALES

Finally, I had the company buy two new gears of each kind so that we could keep running while the old gear was repaired. I still think the peg idea is good and lasting and saves a lot of expense.

I don't want to take the honor away from the man who wrote the peg Kink. I am just writing you to point up the advantages of the idea. I have subscribed to TEXTILE WORLD since 1908 and have always found your ideas good.

J.G.H.

Southbridge, Mass.

DEVELOPMENTS TO WATCH

CONTINUED FROM PAGE 6

National Association of Wool Manufacturers. The wool business is climbing out of its depression, which in 1954 reached the lowest point since 1938. Wool-cloth output is up 15% over 1954, production of worsted knitting yarns is higher than last year, and conditions in the wool-blanket field are better.

FELT-LIKE FABRICS . . . made by interlocking synthetic fibers have been developed by American Felt Co. The new fabrics possess the desirable features of wool felt plus the chemical and thermal properties of man-made fibers. Uses include high-temperature bearing seals, gaskets, filtration pads, and reinforcements for plastic lamination.

PRINTED WOOL FABRICS . . . with brighter colors will be possible with a new process that uses vat dyes. The new process, called Manofast, reduces damage to wool fibers and will open the door for wider uses of printed, knitted, and woven wool fabrics.

ELECTRONICALLY QUILTED VINYL . . . over a face of woven goods with a nonwoven backing is a new low-cost material made by Jason Corp. Applications include children's padded goods, toys, doll and baby carriages, houseware and appliance covers, novelty handbags, luggage, and ready-to-wear trimmings.

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FACTS

about

NEW DEPARTURE
BALL BEARINGS

EXPERIENCE...

FOUNDATION OF OUTSTANDING QUALITY

● In manufacturing highly specialized precision products, such as New Departure ball bearings, there is no short cut to the knowledge and skill gained by long experience. The superiority of the methods, materials and the products resulting from New Departure's sixty years of manufacturing experience is recognized wherever precision ball bearings are used.

BALL BEARINGS MAKE GOOD MACHINES BETTER

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONN.

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Adjustable Speed

Is Your Drive Problem in this List?

AIRCRAFT INDUSTRY
- ☐ Wind Tunnels
- ☐ Dynamometers
- ☐ Accessory Testing

AUTOMOTIVE INDUSTRY
- ☐ Conveyors
- ☐ Machine Tools
- ☐ Presses
- ☐ Dynamometers

CALCINED PRODUCTS
- ☐ Kilns
- ☐ Fans
- ☐ Feeders
- ☐ Conveyors

CHEMICALS
- ☐ Pumps
- ☐ Conveyors
- ☐ Process Machinery
- ☐ Winders

FOOD PROCESSING
- ☐ Mixers
- ☐ Dryers
- ☐ Conveyors
- ☐ Mills

GRAPHIC ARTS
- ☐ Main Presses
- ☐ Press Auxiliaries
- ☐ Winders
- ☐ Slitters

MATERIALS HANDLING
- ☐ Conveyors
- ☐ Cranes
- ☐ Shovels
- ☐ Lift Trucks

MINING
- ☐ Conveyors
- ☐ Hoists
- ☐ Mills

METAL WORKING
- ☐ Rolling Mills
- ☐ Presses
- ☐ Winders
- ☐ Slitters
- ☐ Loop Cars

PULP AND PAPER
- ☐ Paper Machines
- ☐ Auxiliary Helpers
- ☐ Converting Machines
- ☐ Finishing Machines
- ☐ Pulp Processing Machines

RUBBER AND PLASTICS
- ☐ Extruders
- ☐ Plasticizers
- ☐ Calenders
- ☐ Winders

TESTING
- ☐ Engines
- ☐ Pumps
- ☐ Motors
- ☐ Auxiliaries
- ☐ Wind Tunnels

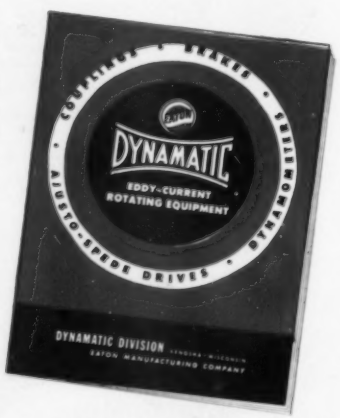
TEXTILES
- ☐ Winders
- ☐ Slashers
- ☐ Dryers
- ☐ Batchers

UTILITIES
- ☐ Fans
- ☐ Boiler Feed Pumps
- ☐ Feeders

DYNAMATIC®

Eddy-Current Equipment Can Be the Solution

Using standard AC lines as a power source, Dynamatic torque transmitting equipment satisfies most stepless adjustable speed requirements. Dynamatic Ajusto-Spede® and Dynaspede® Drives, Couplings, Brakes, and Dynamometers with electronic or magnetic amplifier control provide the advantages of rapid response, wide speed range, quiet operation, low power losses, low maintenance cost, and remote control.



Send for your free copy of the Dynamatic Bulletin GB-2, which illustrates and describes eddy-current adjustable speed rotating equipment.

EATON MANUFACTURING COMPANY
DYNAMATIC DIVISION
3307 FOURTEENTH AVENUE • KENOSHA, WISCONSIN

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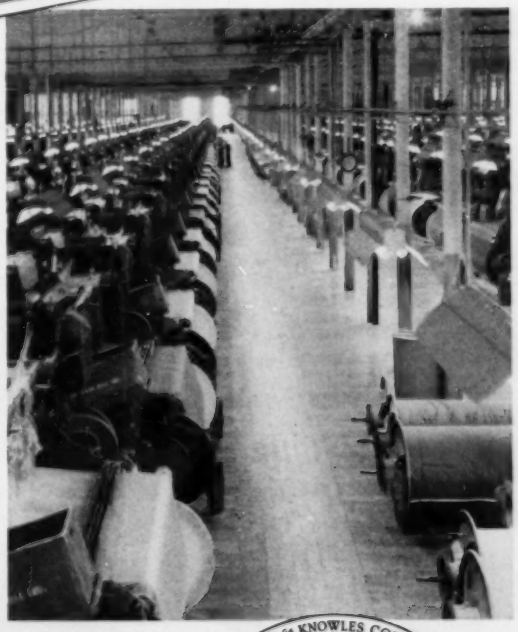
Who said that business "Died in the Wool?" fact is, there's...

TOP OF THE NEWS right now is the sudden build-up in wool business which . . . like most new trends . . . comes unexpectedly out of a not-so-clear sky.

And this is *good* news to mills that stand protected with C&K's W3 or W3A Woolen Looms equipped with the exclusive SELECT-A-PIC feature. They're ready for whatever the demands of fashion may bring . . . ready for *full automatic weaving* on many woolen and worsted fabrics that *can't* be woven automatically on any other equipment.

Is the good news in wool good news to *you?* If not, see C&K today about the new SELECT-A-PIC Looms you need to put you in the running for new profits *right now*.



CROMPTON & KNOWLES Corporation

WORCESTER 1, MASSACHUSETTS, U. S. A.

CROMPTON & KNOWLES CORPORATION C&K WORCESTER, MASS. U.S.A.

Charlotte, N. C. • Philadelphia, Pa. • Allentown, Pa. • Crompton & Knowles Jacquard & Supply Co., Pawtucket, R. I.
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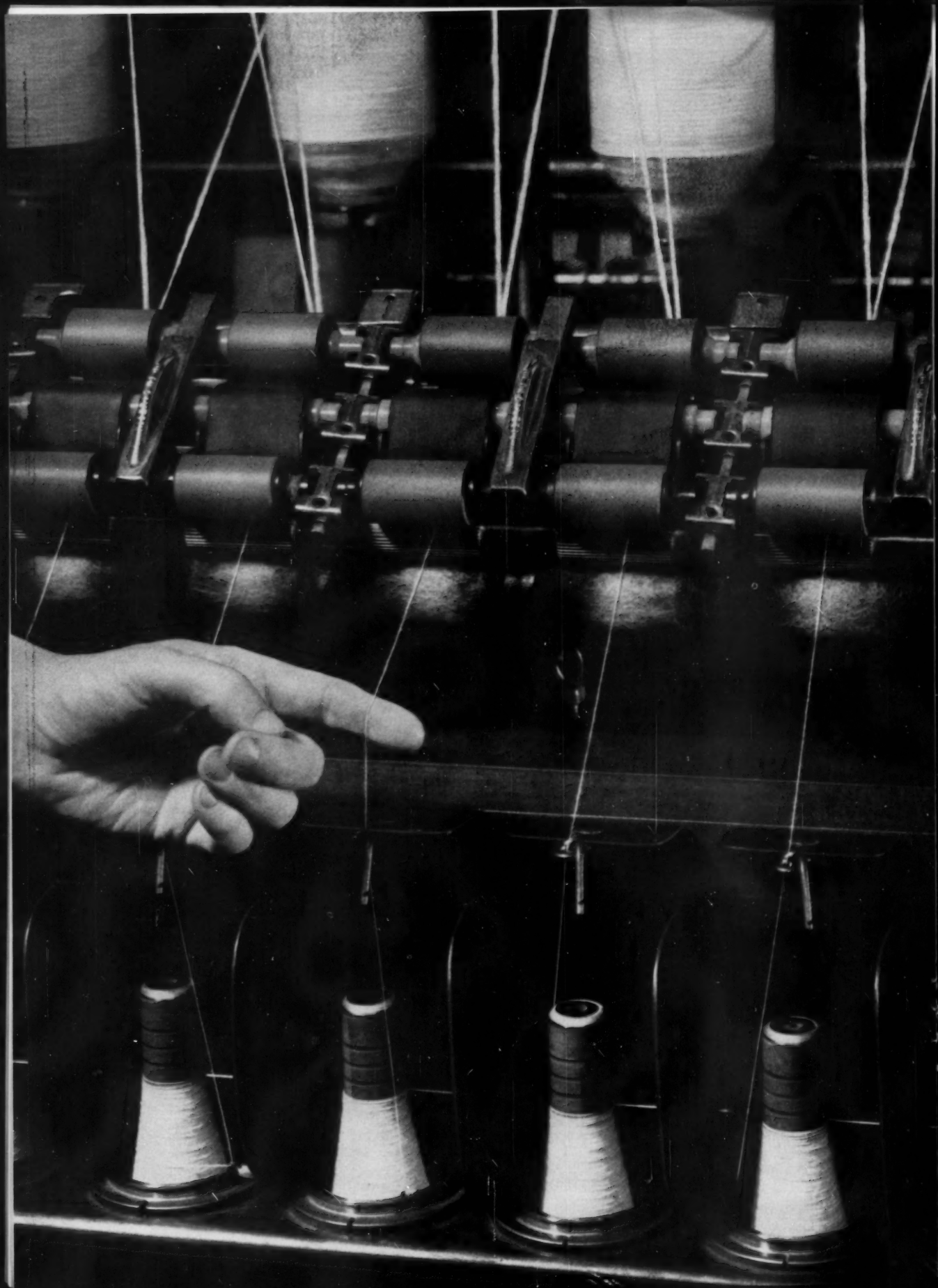


Here's why Accotex Aprons spin

STRONG, UNIFORM YARN

A unique series of chemical baths helps give Accotex® Aprons surface friction characteristics that are just right for today's high draft spinning.

In this patented treatment, aprons move from one chemical bath to another automatically. The temperature and the composition of the baths—as well as the time cycle—are held to rigid specifications. All this is done with split-second timing, with no chance for human error.

As a result, the inner and outer apron surfaces are conditioned so that their frictional properties are exactly right for good fiber handling.

This special treatment is one of many exacting steps taken by Armstrong textile research engineers to make sure every Accotex Apron gives you good spinning performance. Other advanced testing methods, plus the very latest production techniques, also assure you that these aprons will deliver strong, uniform yarn year after year.

There's an Armstrong Accotex Apron specially designed for your needs, no matter what fiber or blend you're spinning . . . no matter what equipment you're using.

For example, the black-and-white NO-7075 Accotex Apron is engineered to meet the exacting requirements of double-apron spinning, especially those frames with close-pin cradles.

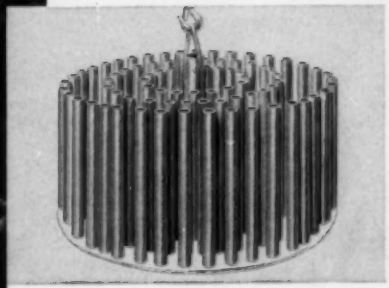
The NO-750 Accotex Apron is made of a special, super-flexible synthetic rubber for smooth drafting action and good yarn control on single-apron equipment.

If you're not already using Accotex Aprons, ask your Armstrong representative to arrange for a test frame next time he calls. You'll see in a short time how these aprons improve yarn quality.

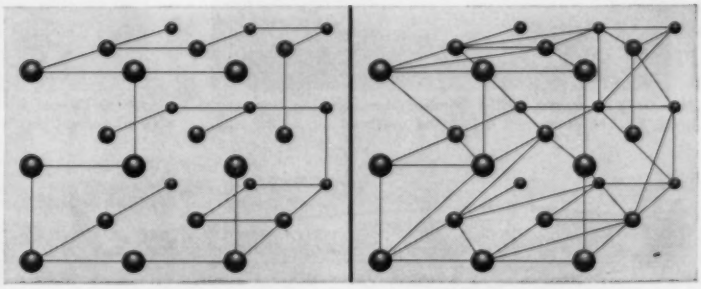
For more information about Accotex Aprons and our other textile supplies, write for a copy of "Armstrong Textile Roll Coverings and Mill Supplies." Address Armstrong Cork Company, Industrial Division, 6408 Dauphin Street, Lancaster, Pennsylvania.

Armstrong ACCOTEX APRONS

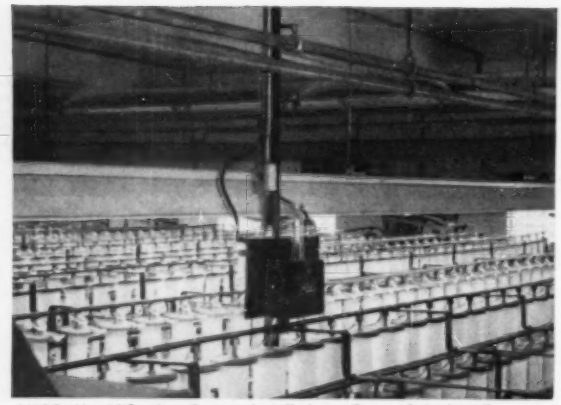
. . . used wherever performance counts



Taking a chemical bath. Before they're cut, Accotex Aprons go through a series of chemical baths which gives them the proper surface frictional characteristics.



The molecules in resilient synthetic rubber are not completely cross-linked (left). Although the surface is smooth, the friction is too high for textile aprons. The special bath developed by Armstrong produces a denser surface (right) with lower friction.

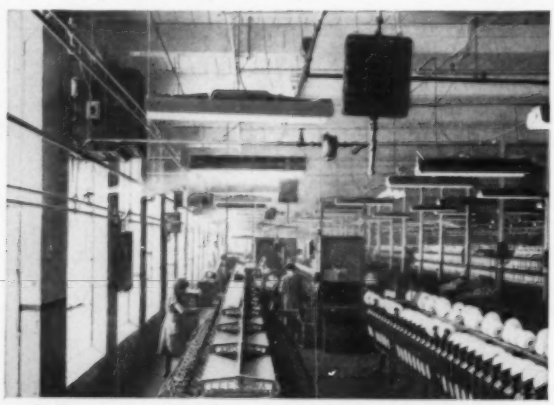


AMCO Humidification System installed at Caron Spinning Company, Robesonia, Pa. The highly sensitive AMCO Cyclestat Control holds humidity within narrow limits.

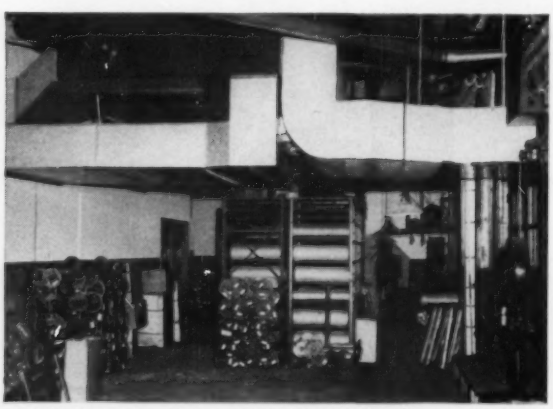
There's an AMCO AIR CONDITIONING SYSTEM designed for YOU!

When you think of air conditioning, remember that AMCO offers systems and equipment for every manufacturing requirement and every climatic condition. There are four different types of AMCO systems, alone or in combination: humidification, evaporative cooling, unit dry-duct, or central station air conditioning. And because AMCO engineers have these four basic systems — plus all associated equipment and controls — they are able to offer you unbiased advice on the *best* system for your particular need.

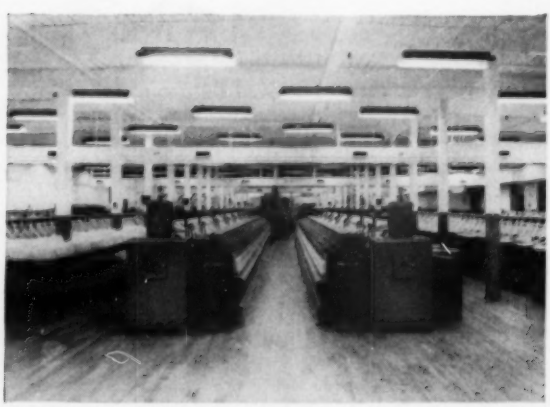
If you want the facts about textile mill air conditioning, with the advantages and limitations of each system detailed, as well as answers to such questions as cost, adaptability, capacity, maintenance and operating expense, write for AMCO's booklet, "AIR CONDITIONING for the TEXTILE INDUSTRY". Or better still, ask AMCO to recommend, without obligation, the system best suited to your mill.



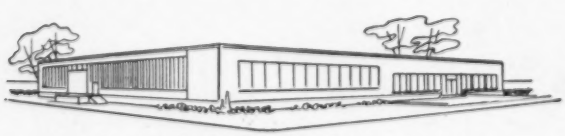
AMCO Evaporative Cooling System in Texas Textile Mills, McKinney, Texas. Note window units which control mixture of fresh and recirculated air.



AMCO Unit Dry-Duct System at The Windsor Manufacturing Company, Philadelphia, Pa. The entire unit is installed overhead out of the way.



AMCO Central Station Air Conditioning in the Roving Dept., Highland Park Mills, Charlotte, N. C. This is AMCO's highly efficient split-system.

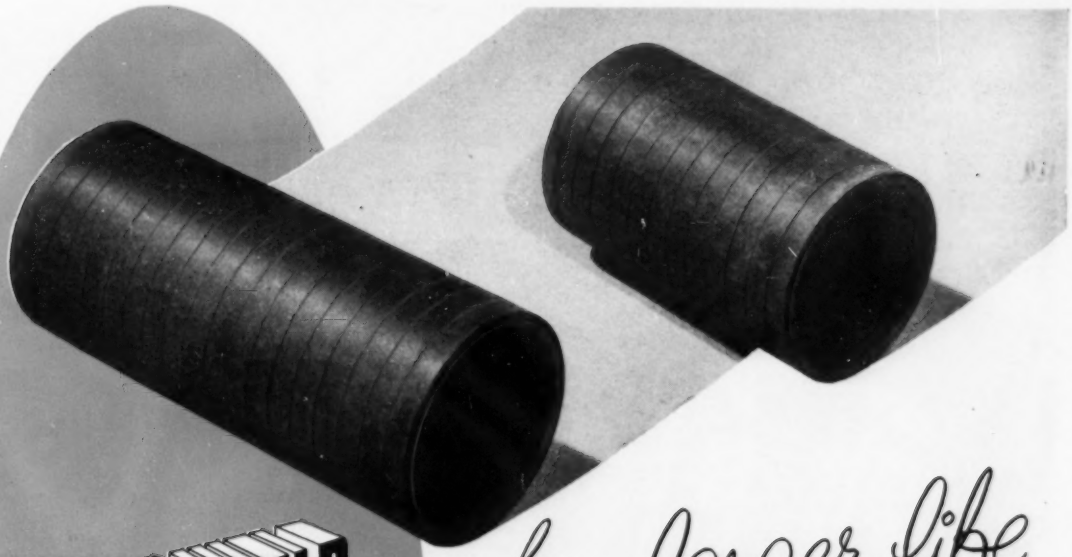


New Cleveland-Rowan Plant of the American Moistening Company. This modern plant is located at Cleveland, N. C. for the fabrication of duct work and sheet metal products.

AMCO

AIR CONDITIONING SYSTEMS since 1888

AMERICAN MOISTENING COMPANY, CLEVELAND, NORTH CAROLINA • ATLANTA, GA. • BOSTON, MASS. • CAMDEN, N. J. • PROVIDENCE, R. I.



DUROWELD

REUSEABLE

CHEESE CORES

for

- ☆ ABBOTT AUTOMATIC WINDERS
- ☆ BARBER-COLMAN SPOOLERS

for longer life at less cost!

Here are superior reuseable cheese cores—made to micrometer tolerance for true balance in creating a better, firmer package. SONOCO Duroweld cheese cores will deliver at even tension, with fewer breaks, under high speed conditions. Made especially for Abbott Automatic Winders in three lengths: 4¾", 5½" and 7". For Barber-Colman Spoolers in 3¼" and 3¾" lengths. Ends can be lacquer-tipped, in choice of 18 colors, for identification. SONOCO can also furnish cheese cores for one-time use.

SONOCO's exclusive Duroweld Process has resulted in radically new, superior carriers for the textile industry. The cheese cores pictured and described on this page are typical of the precision products made possible by this process.

For complete information, consult your SONOCO sales-engineer, or write us direct.

sonoco — WINDS THE WORLD — PAPER CARRIERS — REG. U.S. PAT. OFF.

SONOCO PRODUCTS COMPANY

MAIN OFFICE — HARTSVILLE, S. C.

MYSTIC, CONN. • AKRON, IND. • LOWELL, MASS. • PHILLIPSBURG, N. J.
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DEPENDABLE SOURCE OF SUPPLY

VISIT OUR SPACE! Southern Textile Exposition, Greenville, S. C. — BOOTH 244

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Why is the NEW Bahnson OPEN AIRE CREEL superior?

It's the only open creel constructed of heavy stamped steel with a baked enamel finish!

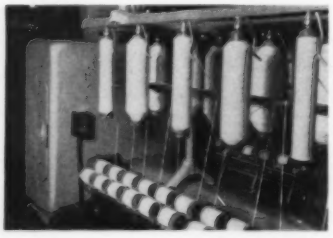
1 Maximum strength: Deep drawn steel crossarms are notched to give stronger lateral support and to conceal runner clips. Extruded aluminum runners are furnished as optional, but most mills prefer the smaller and stronger baked enamel steel runners.

2 Cleanest surfaces: Baked enamel steel surfaces provide a smoother, more durable finish than cast or extruded aluminum and also eliminate etching and corrosion, and minimize lint accumulation.

Plus this added feature:

3 Dynamic colors: Make your frame and spinning room more attractive with a choice of specially color-finished creels at no additional cost.

Bahnson P.M.* Plan



***Packaged Modernization**

A complete plan for plant modernization with new equipment for vacuum collection, cleaning, creels, and air conditioning. Originated by Bahnson to give you co-ordinated engineering, group installation, one-source service and individual responsibility in one package buy. Result: maximum production and superior quality plus dollar savings!

Whether for single units or complete installations, write Bahnson for full information on how its P.M. Plan can help you. Bahnson representatives will be happy to discuss and study your needs.

Bahnson COMPANY
WINSTON-SALEM, N. C.

AIR CONDITIONING • CLEANING
VACUUM COLLECTION

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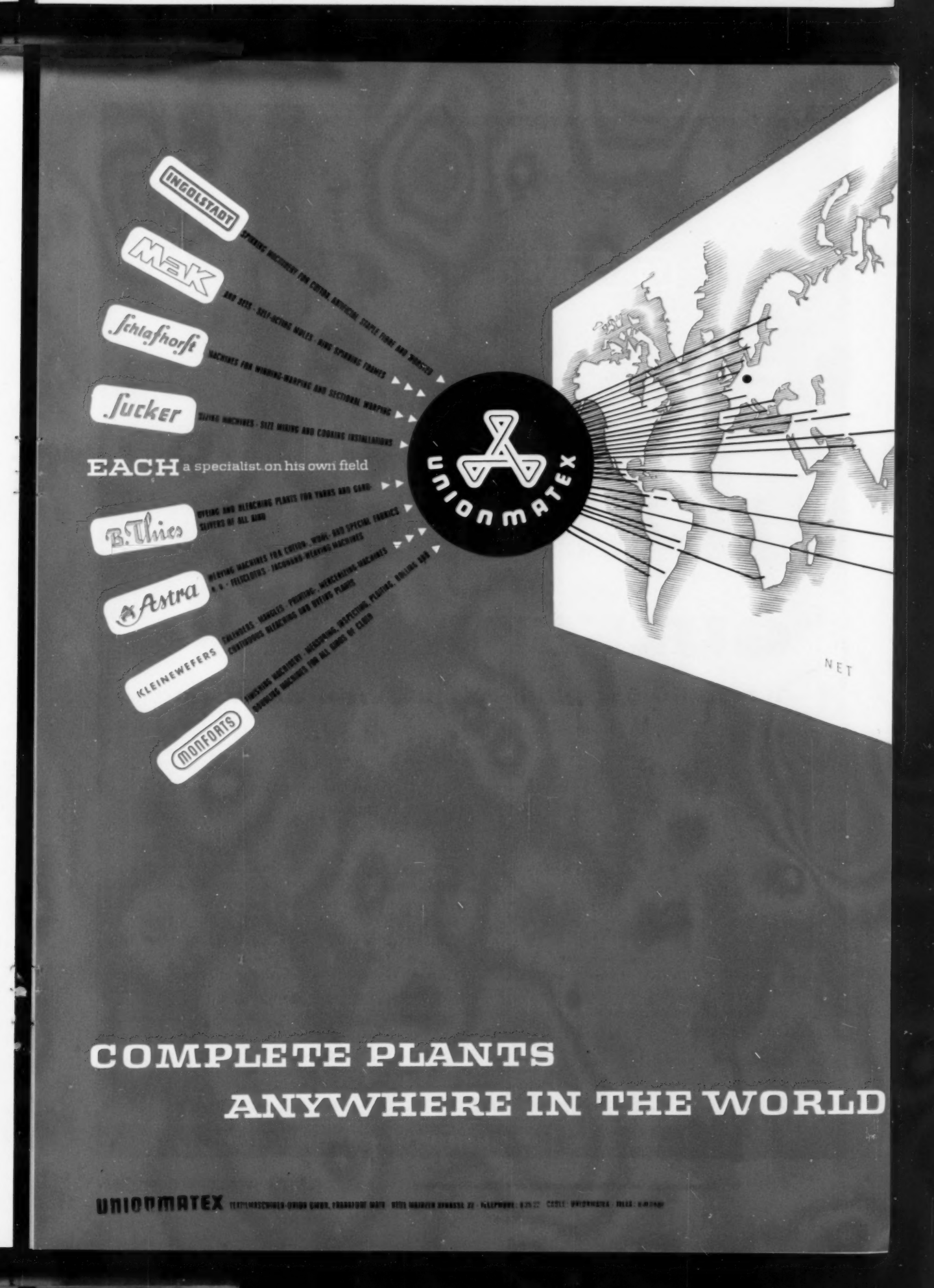

COMPLETE PLANTS
ANYWHERE IN THE WORLD

UNIONMATEX

"GULFSPIN keeps our spindles spinning clean and free"

*says T. F. Snipes, Overseer of Spinning of this prominent southern mill**

"WE have used Gulfspin for almost three years and have found that our 34,000 spindles stay clean with practically no sticking," says Mr. Snipes. "Also Gulfspin doesn't thicken after long usage."

In addition to the benefits mentioned above, Gulfspin provides effective protection against rust—and it reduces power costs because of its ability to maintain its original viscosity after many months of service.

You'll find that the use of Gulfspin will contribute to smoother spindle operation, fewer ends down, and rock-bottom maintenance and power costs.

Contact a Gulf Sales Engineer and let him demonstrate Gulfspin's superiority on your frames. Consult the telephone directory for the number of your local Gulf office.

Gulf Oil Corporation · Gulf Refining Company
1822 Gulf Building, Pittsburgh 30, Pa.

**Name furnished upon request.*

GULF

THE FINEST PETROLEUM PRODUCTS FOR ALL YOUR NEEDS

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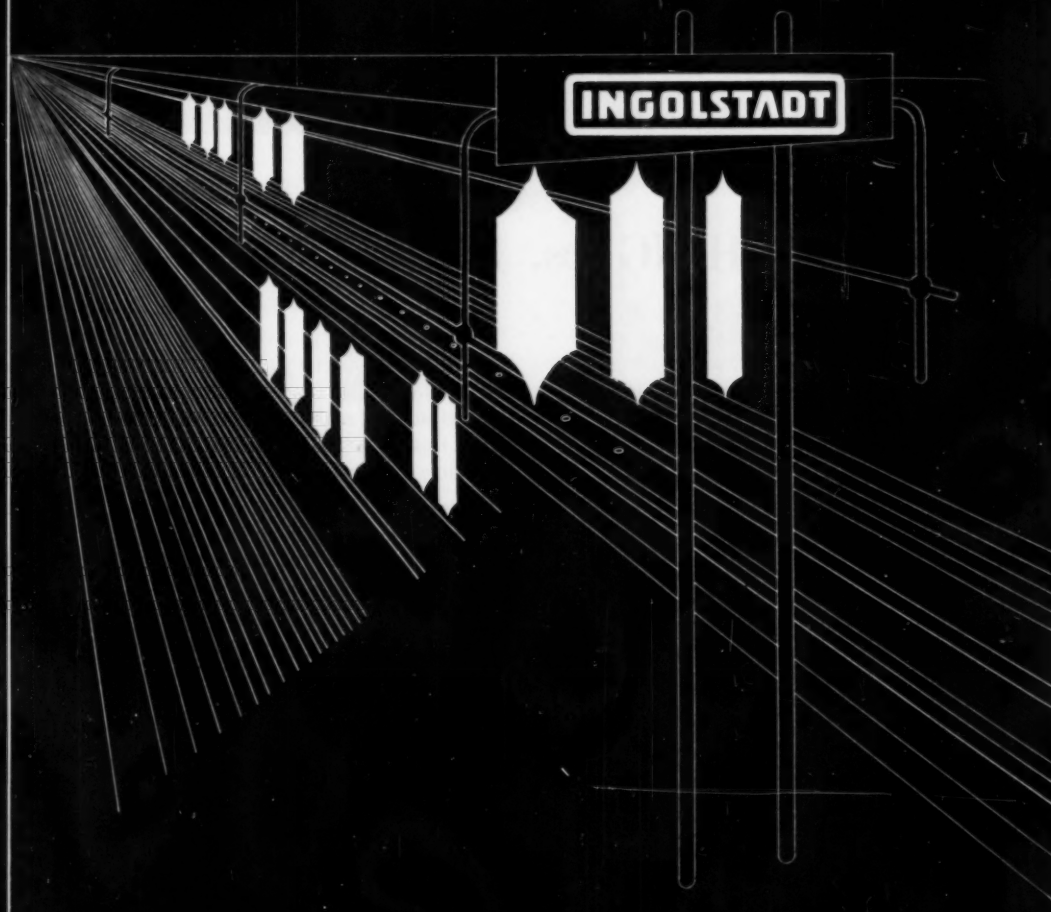
DEUTSCHER SPINNEREIMASCHINENBAU INGOLSTADT *Ingolstadt/Donau* GERMANY

SPINNING MACHINERY FROM INGOLSTADT THROUGHOUT THE WORLD!



SPINNING MACHINERY FROM INGOLSTADT THROUGHOUT THE WORLD!

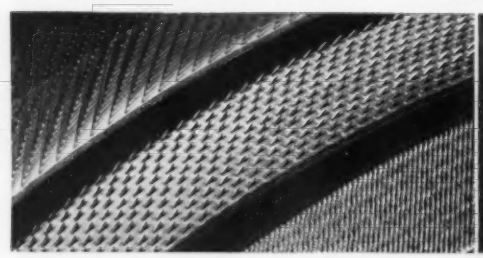
SPINNING MACHINERY

FOR COTTON · ARTIFICIAL STAPLE FIBRE AND WORSTED

Planning and supply of complete spinning plants based
on latest experience in spinning technology and mechanical engineering
Spares for spinning machinery · Conversions of draft systems

VIRL

DEUTSCHER SPINNEREIMASCHINENBAU INGOLSTADT *Ingolstadt/Donau* GERMANY



Ashworth Tips ON CARDING

No. 32 in a Series

FILLET CLOTHING *vs.* PLUGS AND TACKS

Unfortunately in many instances little or no attention has ever been given to the importance of using the correct plugs and tacks when applying fillet clothing.

All card cylinders and doffers are taper drilled; and unfortunately, no standards as to hole size and degree of taper were ever adopted for any prolonged period.

It is to your best interests to make a study of this and have on file, available for ready reference, the complete history on size and taper of plugs required for the cards in your mill. When ordering replacements, establish a practice of sending samples and then double checking on receipt of the shipment to be certain that you received plugs exactly to your sample.

Prior to applying new fillet clothing, plugs should be carefully inspected on both cylinders and doffers, and those that are oil soaked or damaged in any way should be drilled out and replaced with new plugs. Shoe pegs should be driven in the tack holes of the plugs that are left in.

On the various models of card produced by Saco-Lowell Shops, beginning with the old Pettee Machine Works and carrying through to their 1956 models, you will find various sizes of plugs; and even on some models, the holes on the selvages of the cylinders will differ from the holes in the cross rows, necessitating the use of two sizes of plugs on the same cylinder. On still other models, solid plugs are used. So in the case of old and new cards produced by the present Saco-Lowell Shops, it is almost imperative that samples be submitted. The Whitin card uses a special size plug, the H. & B. a special size doffer plug.

When replacing plugs on either edge of cylinders, be certain that the part that projects beyond the cylinder thickness is cut off flush with the under side of the cast iron cylinder. If such plugs are left uncut, you will soon have a raised fillet due to chokes in the sides of the cards knocking these plugs up.

It is also vitally important to use the correct size of tacks on both cylinder fillets and doffer fillets. These are more or less standard items with the card clothing manufacturers. The diameter of the head and length of leg are designed particularly for use with fillet card clothing; and tacks of the correct specifications can only be obtained from card clothing manufacturers.

ASHWORTH BROS., INC.

American Card Clothing Co. (Woolen Division)

Fall River*†‡ Worcester‡ Philadelphia*†‡ Atlanta†‡
Greenville*†‡ Charlotte†‡ Dallas†‡ (Textile Supply Co.)
E. G. Paules, Representative — Los Angeles, Calif.
*Factory †Repair Shop ‡Distributing Point
3 Factories • 6 Repair Shops • 7 Distributing Points

PRODUCTS AND SERVICES

Clothing for Cotton, Wool, Worsted, Silk, Synthetic Fibre and Asbestos cards and for All Types of Napping Machinery. Brusher Clothing and Card Clothing for Special Purposes. Lickerin Wire and Garnet Wire. Sole Distributors for Platt's Metallic Wire. Lickerins and Topflats Reclothed.

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Ashworth PIONEERS IN CARD CLOTHING

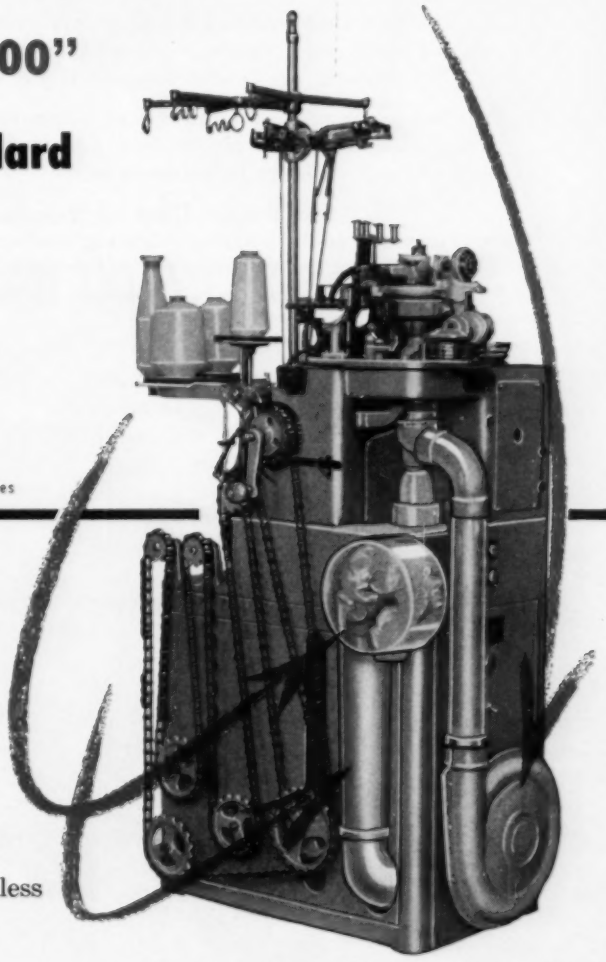
3 FACTORIES • • • 6 REPAIR SHOPS • • • 7 DISTRIBUTING POINTS

← For more data, write this page number on Reader-Service card.

THIS NEW AUTOMATIC TENSION DEVICE*

on the FIDELITY "400" Sets the New Standard in Seamfree Stocking Quality!

*Patents Pending in United States and all Foreign Countries



Compare the unique features of the revolutionary new Fidelity Automatic Tension Device:

- Installation *does not* increase machine height!
- Completely air-operated— no mechanical arms or contrivances!
- Uniform tension is maintained regardless of knitting speed!
- Requires no resetting if machine is hand racked!
- Nylon retainer on transparent receptacle assures no-snag removal of stockings!
- Totally self-contained unit—easily installed without auxiliary air inlets!

Compare—then decide to meet the *new* standard of production quality *now*, with the superior new Fidelity Automatic Tension Device . . . designed for use with the electronically controlled Fidelity "400" and other makes of knitting machines. Write today for details . . . or visit our showrooms.

Designers and Builders of Intricate, Automatic Precision Machines

SINCE 1911

FIDELITY MACHINE COMPANY, INC.

3908-18 FRANKFORD AVENUE, PHILADELPHIA 24, PA.

EXPORT DEPT.: 25 BEAVER STREET, NEW YORK 4, N.Y.

SOUTHERN SALES OFFICE: 607 PROVIDENT BUILDING, CHATTANOOGA, TENNESSEE

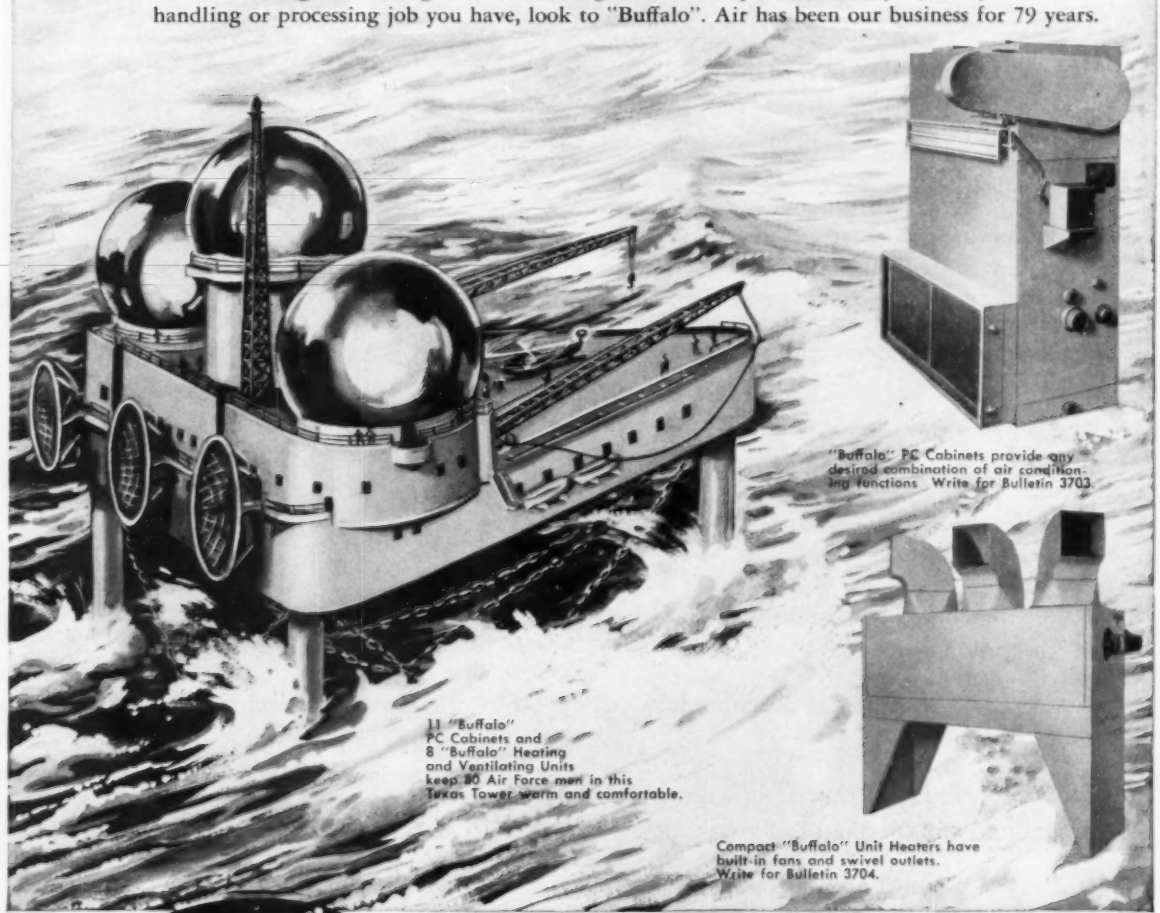
For more data, write this page number on Reader-Service card. →

"Buffalo" units maintain air comfort in our "ATLANTIC WATCH TOWERS"

This radar-equipped Tower, standing continuous long-range lookout over the Atlantic, takes a lot of rough weather — yet it's always comfortable inside. 19 dependable "Buffalo" Air Conditioning and Heater Units see to that.

The "Buffalo" Heaters warm the fresh air drawn in from outside for the living quarters; while the "Buffalo" Cabinets maintain accurate temperature control and clean, filtered air in the radar control room.

You'll find "Buffalo" Units like these doing important "climate" jobs in every type of plant, store and public building — heating, cooling, ventilating, controlling humidity, filtering or washing air — and doing it with complete reliability. For any air handling or processing job you have, look to "Buffalo". Air has been our business for 79 years.



11 "Buffalo" PC Cabinets and 8 "Buffalo" Heating and Ventilating Units keep 90 Air Force men in this Texas Tower warm and comfortable.

"Buffalo" PC Cabinets provide any desired combination of air conditioning functions. Write for Bulletin 3703.

Compact "Buffalo" Unit Heaters have built-in fans and swivel outlets. Write for Bulletin 3704.

BUFFALO FORGE COMPANY

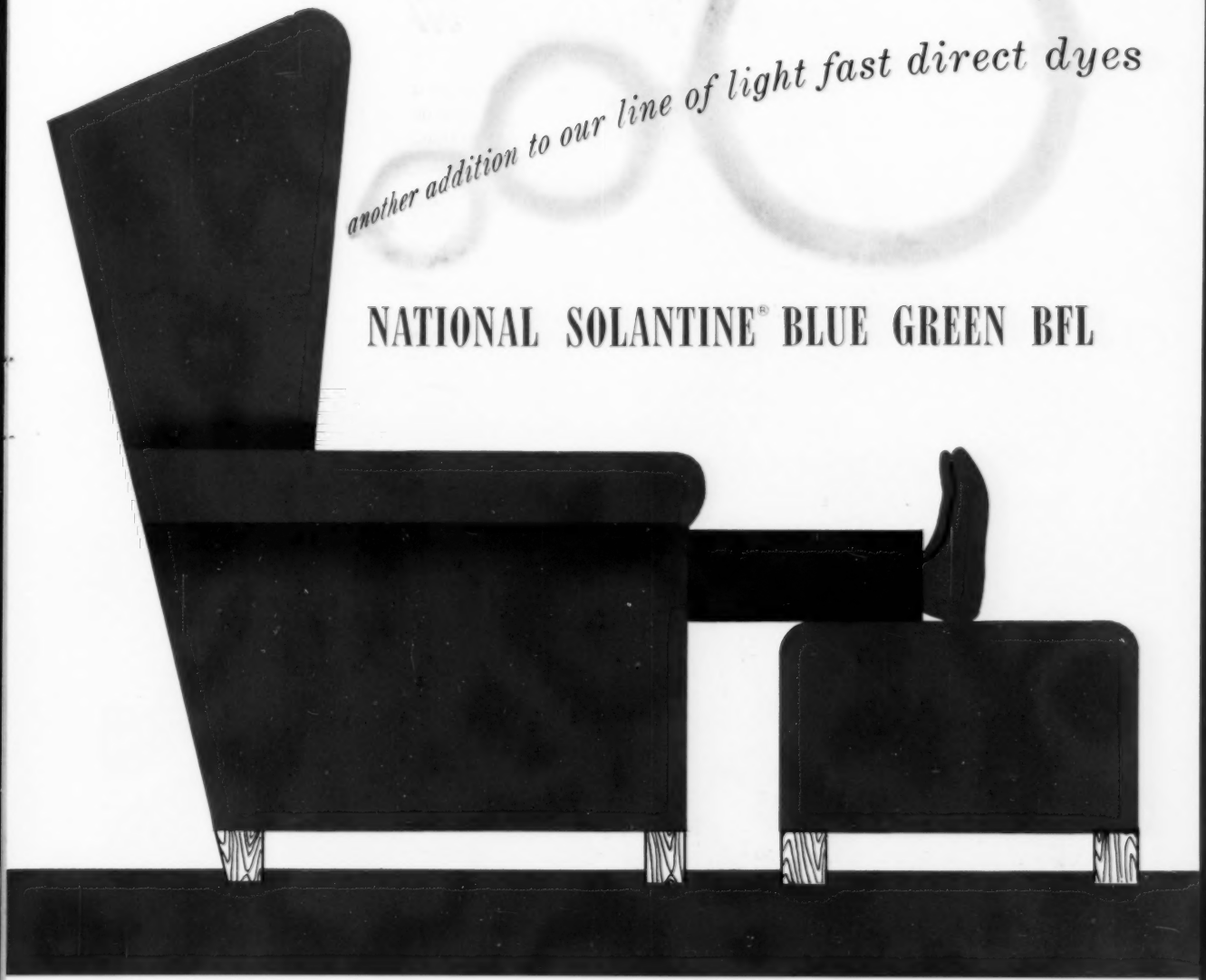
BUFFALO, NEW YORK

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

VENTILATING AIR CLEANING AIR TEMPERING INDUCED DRAFT EXHAUSTING FORCED DRAFT COOLING HEATING PRESSURE BLOWING

another addition to our line of light fast direct dyes

NATIONAL SOLANTINE® BLUE GREEN BFL



Here is a useful National non-dusting Direct Dye for cotton carpet yarns, upholstery fabrics, hosiery, suitings and the like in bright bluish-green shades.

National Solantine Blue Green BFL rates "excellent" in fastness to light, rubbing, alkalis, dry cleaning, water and sea water and has very good fastness to washing and perspiration. It discharges well with neutral and alkali pastes. In all, an excellent value.

Why not keep a sample at hand for the next match where this easy-to-use, always popular shade can be used. Just get in touch with our nearest branch for a sample, shade card (Bulletin #441) and quotation.

NATIONAL ANILINE DIVISION ALLIED CHEMICAL & DYE CORPORATION • 40 RECTOR ST. NEW YORK 6, N. Y.

Boston Providence Philadelphia Chicago San Francisco Portland, Ore. Greensboro Charlotte Richmond Atlanta Los Angeles Columbus, Ga. New Orleans Chattanooga Cleveland Toronto

Allied Chemical

HAYES INDUSTRIES, INC.

The World's Largest Producer of Light Metal Beams

JACKSON, MICHIGAN

SOUTHERN REPRESENTATIVE:
R. E. L. Holt, Jr. & Assoc.
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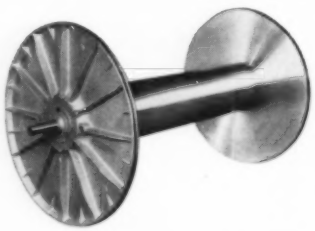
EASTERN REPRESENTATIVE:
J. Paul Laird
Philadelphia, Pa.

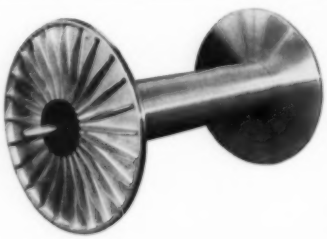
NEW ENGLAND REPRESENTATIVE:
J. S. Fallow & Co.
New Bedford, Mass.

CANADIAN REPRESENTATIVE:
J. S. Fallow & Co.
Montreal, Canada

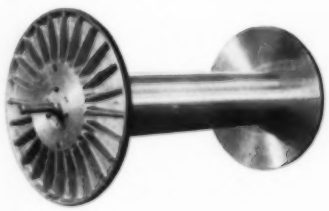
HAYES LIGHT METAL BEAMS cut costs in modern textile production, and help toward *higher profits* due to true running, perfect balance, elimination of snagging or catching with the highly polished finish of inside head faces, rust-proof construction, low maintenance costs, and fewer fabric rejects. Illustrated are only a few of HAYES LIGHT METAL BEAMS for standard production purposes. Our skilled engineering staff can help you. *Write, phone, or wire us your problem today.*



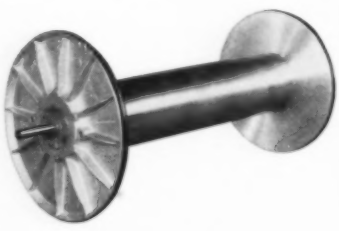
HAYES 38" x 54½" Aluminum Section Beam for cotton and spuns. Lightweight 207 lbs. Capacity, net weight of yarn 1,050 lbs.



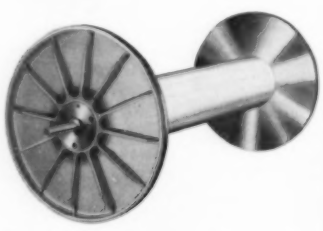
HAYES 36" x 54½" Heavy Duty Aluminum Section Beam for acetate, spuns, and cotton. Can be adapted to all standard warpers.



HAYES Heavy Duty Section Beam for nylon. Can be furnished in 30" and 32" diameter heads. Barrel diameter 11¾". ½" minimum wall.

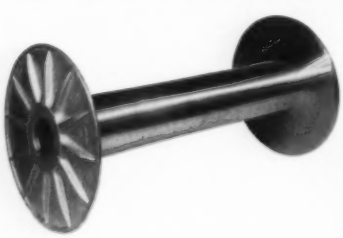


HAYES Bolted Type Section Beam for acetate. 30" x 54¼". 11¾" diameter barrel. Can be adapted to all standard warpers.

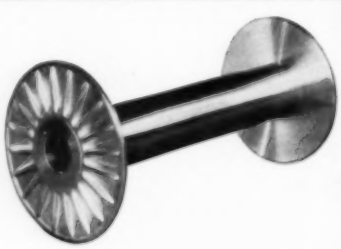


HAYES Aluminum Section Beam for acetate. Screwed type. Head sizes 26", 28", 30", 32". 54¼" traverse. 11¾" diameter barrel. Can be adapted to all standard warpers.

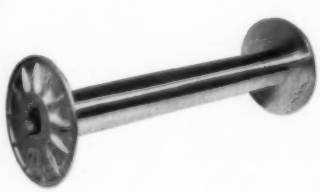
HAYES 21" Aluminum TRICOT Beam for nylon. Barrel size 7¾" diameter. Head thickness 1". Furnished in ⅜" and ½" wall. Bored for 4½" shaft. Keyways 9/16".



HAYES 21" Aluminum TRICOT Beam for acetate. Barrel 7⅜". Head thickness 1". Any desired traverse. Bored for 4½" shaft. Keyways 9/16".



HAYES 21" Heavy Duty Forged Head Aluminum TRICOT Beam for nylon. Head thickness 1¼". Barrel 7¾". ½" wall. 39-7/16" traverse. Bored for 4½" shaft. Keyways 9/16".



HAYES 13¾" diameter Aluminum TRICOT Beam for acetate. Barrel size 4.925" diameter. Made in head thicknesses of 39/64" and 1". Traverse dimensions to suit. Bored for 2¾" shaft. Keyways 9/16".

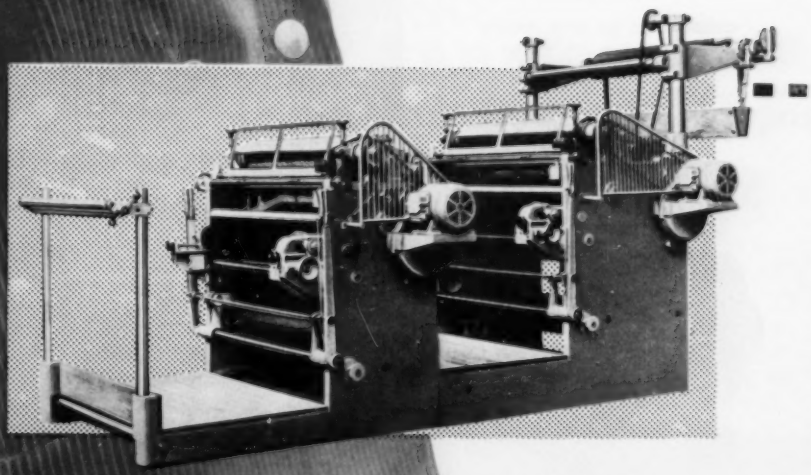
HAYES manufactures a variety of Aluminum Loom Beams to fit Draper, and Crompton & Knowles looms, for acetates, spuns, and nylon. These can be manufactured with fixed or adjustable heads in sizes from 22" to 32" diameters.

100 YEARS

Shearing Machines for Velvet and Velveteen

(Models CA 1n, CB 9n)

One and two cylinder models with high speed cutting capacity



PRODUCTION PROGRAM:

Dept. 1
Finishing Machines for Woolens, Cotton, Synthetic Fiber, etc.

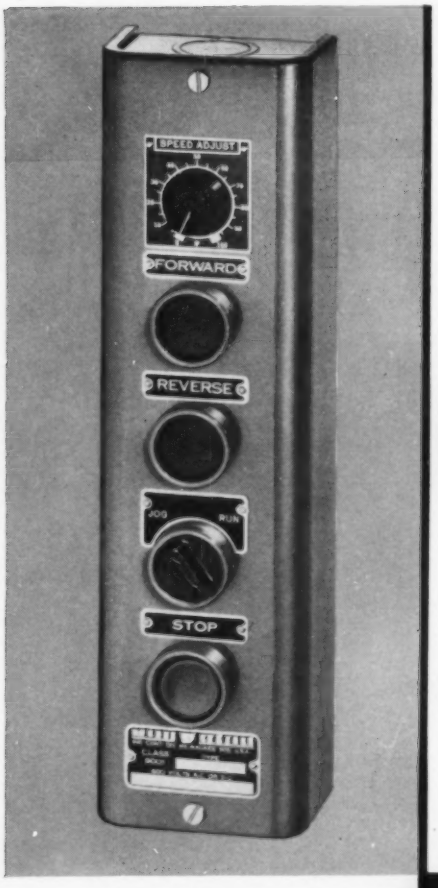
Dept. 2
Cutting & Finishing Machines for Corduroy, Velveteen, Suedes.

Dept. 3
Weaving Preparatory Machines. High Speed Cone Winder, Yarn Singeing Machines, High Speed Warping Machines

FRANZ MÜLLER • MASCHINENFABRIK • M. GLADBACH (RHEINLAND) GERMANY

NORTHERN U. S. AND CANADA:
TEXTILE MACHINERY IMPORT CO., 277 NORTH AVENUE, NEW ROCHELLE, N. Y.

SOUTHERN U. S.:
PARROTT & BALLENTINE, 510 S. CAROLINA NATIONAL BANK BUILDING, GREENVILLE, S. C.



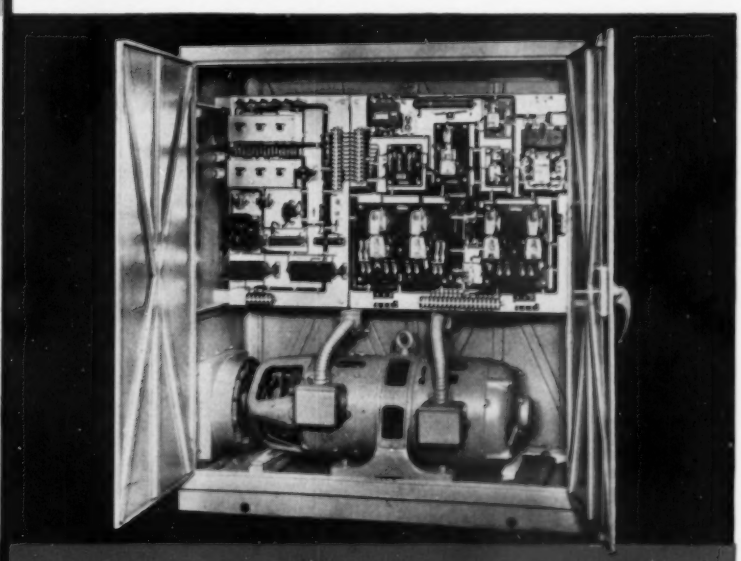
The "Unseen Hand" at the Controls . . .

AUTOMATICALLY SENSITIVE

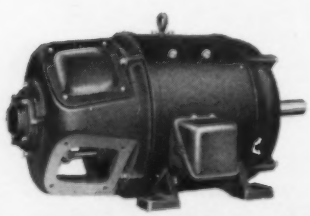
Performance-Rated©

Century SELECTIVE SPEED DRIVE

More accurately than the most experienced operator, Performance-Rated Century Selective Speed Drives *automatically* adjust motor speed to meet operating requirements. Speed changes are integrated with varying pressure, temperature, viscosity or size of the material being worked. You can also use Century Selective Speed Drives for starts, stops and jogs—forward or reverse—as required.



For full information and assistance on any motor drive application, AC or DC, call your nearest Century Sales Office . . . or write us direct.



Performance-Rated©
1/8 to 400 H. P.

CENTURY ELECTRIC COMPANY

1806 Pine St., St. Louis 3, Mo. • *Offices and Stock Points in Principal Cities*

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WON'T MARK DELICATE FABRICS

This smooth Armstrong roll covering provides high take-up tension

Even the most delicate loom-finished fabrics can be handled safely with Armstrong NO-732 Take-up Roll Covering. That's because NO-732 has an even, finely textured surface that practically eliminates any risk of marks or indentations.

This unusual roll covering always gives you firm, uniform take-up tension from selvage to selvage. In fact, the special synthetic rubber compound developed by Armstrong for NO-732 actually provides up to *twice* the holding power you'd normally expect from a rubber material.

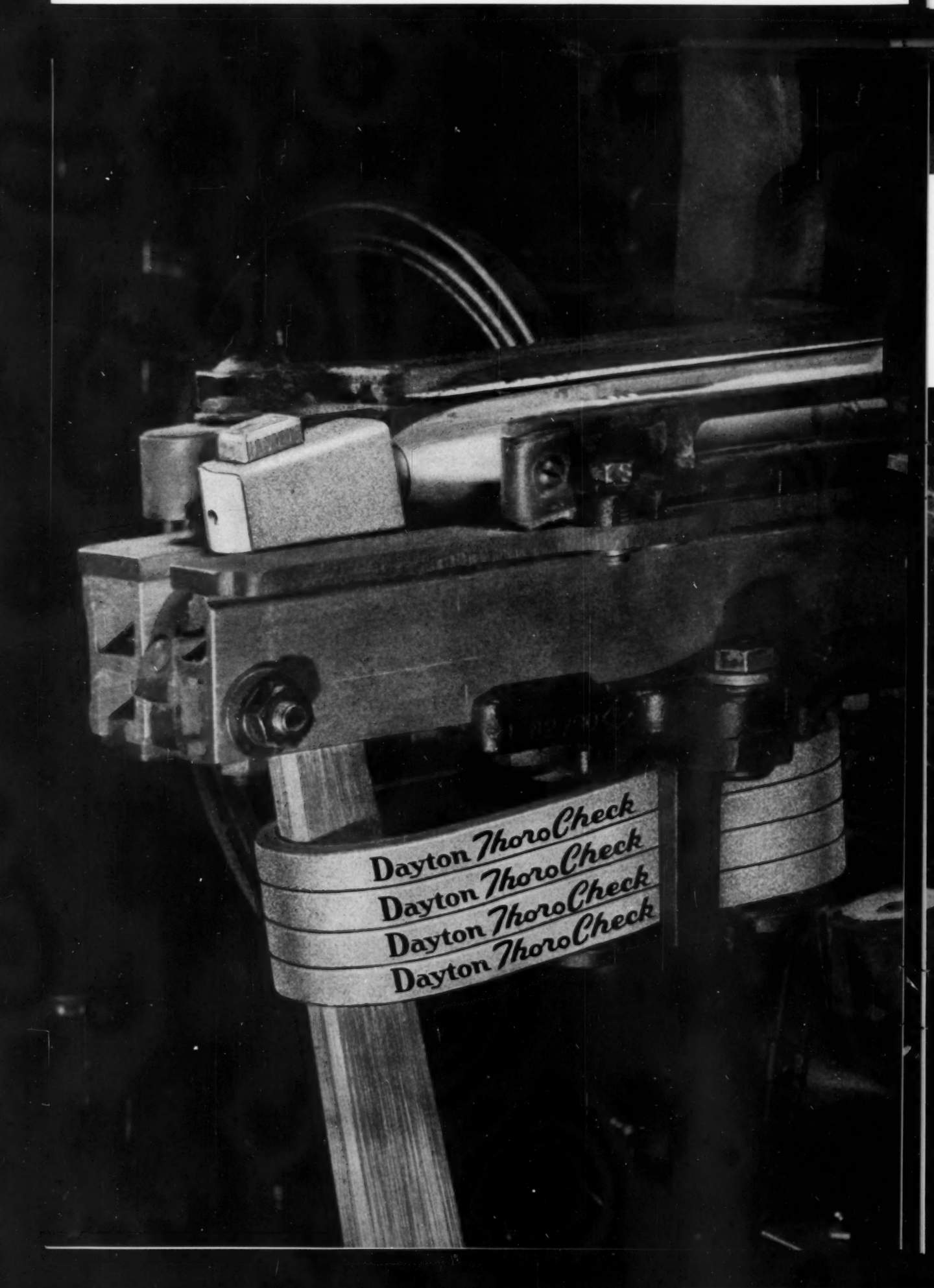
NO-732 provides this top performance for a long time, too. It's backed with tough fabric for extra strength and good adhesion to the roll. Like all Armstrong Loom Supplies, it's designed for years of service.

A test in your weave room will prove how well NO-732 Roll Covering handles all kinds of fabrics. For more information, write for the booklet, "Armstrong Loom Supplies." Armstrong Cork Company, 6908 Dauphin Street, Lancaster, Pennsylvania.

Armstrong LOOM SUPPLIES

. . . used wherever performance counts

LOOM CLUTCH DISCS AND INSERTS • PRESS ROLL COVERING • LOOM BRAKE & LET-OFF STRIPS • TEMPLE ROLL COVERINGS


Dayton ThoroCheck
Dayton ThoroCheck
Dayton ThoroCheck
Dayton ThoroCheck

Improve your Picker Control and save 25 to 50 percent

In Picker and Check Strap Costs!

One mill saved 50% on picker replacement by installing Dayton Thorobred Loop Pickers. It's easy to see why, too. Daytons, molded in one piece, won't break when driven onto the stick.

Dayton Loop Pickers cushion millions of shuttle contacts without strain. And contact is perfect every time because of the slightly tilted, flared-bottom picker stick hole that insures easy, accurate seating and exact fit. Smooth sides and round corners practically eliminate jerked in fillings, save time and money – increase production.

Other mills report 25 to 50% savings in check strap costs with Dayton ThoroCheck Endless Check Straps.

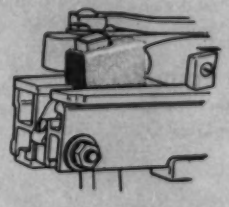
Typical proof: One mill ran Daytons on X-2 looms 24 hours a day, 5 days a week. After 2400 hours, no wear was apparent, no adjustment needed. Other check straps lasted half as long.

Revolutionary in design and construction, Dayton ThoroCheck straps eliminate drag over stick, give safe, graduated braking in both directions. Temperature or humidity never affect them, so you're assured fast, Monday starts.

Try Dayton Thorobred Loop Pickers and Dayton ThoroCheck Endless Check Straps on your looms for perfect control, sizeable savings. Your Dayton Representative will arrange a test or write *Dayton Rubber Co., Textile Div., 401 S. Carolina National Bank Bldg., Greenville, S. C.*

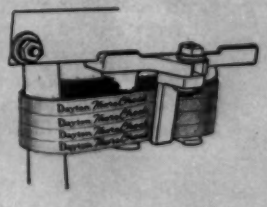
© D.R. 1956

Dayton Thorobred Loop Picker



New Design! Narrow back eliminates wear on lay end strap.

Dayton ThoroCheck Check Straps

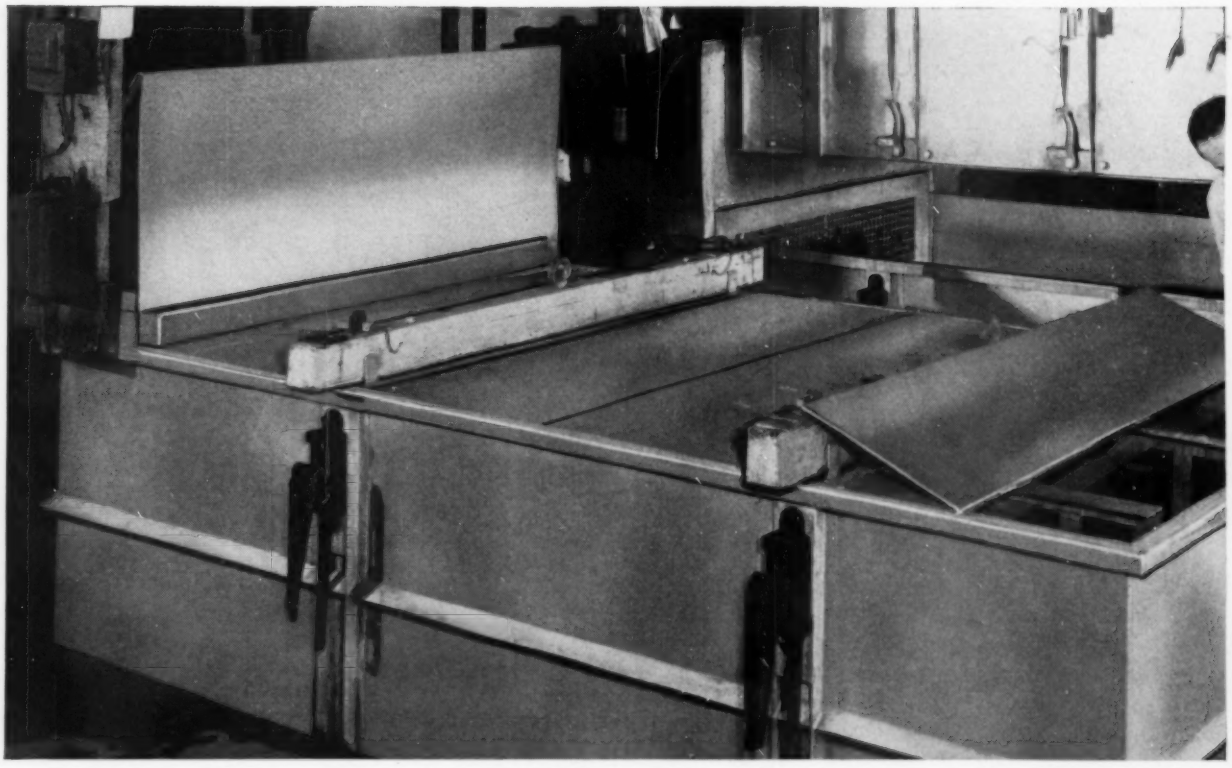


Extra economy! Can be replaced singly or in sets.

Dayton Rubber

51 YEARS OF PROGRESS

Dayco and Dayton Thorobred Textile Products for better Spinning and Weaving.



The metal that permits fast

Just as rapidly as it can be washed and wiped, ENDURO Stainless Steel dyeing equipment is ready for another color. A water rinse quickly restores ENDURO's smooth, hard surface to sparkling cleanliness.

There's no need for expensive boil-outs—no need for using caustic, reducing or oxidizing agents to remove dye. And, because ENDURO does not react with or absorb dye bath chemicals or peroxide bleaches, colors come true, and considerably less of these chemicals are required to maintain necessary concentrations.

Flexibility is still another advantage of ENDURO-made equipment. You can use the same machine for dyeing, rinsing or bleaching. And with ENDURO's easy cleanability making possible quick color changes, small runs can be processed economically.

Textile equipment made from ENDURO lasts and lasts. It stubbornly resists rust and corrosion, eliminating the danger of off-colors caused by metallic oxides. It resists scaling, even after prolonged exposure to high temperatures.

Any slightly higher initial cost of ENDURO equipment is *more* than offset by immediate savings in maintenance costs, lower cleaning costs, longer service life.

Now is the time to find out what ENDURO can do for you. Your equipment dealer has all the facts. Or send us the coupon for more information.

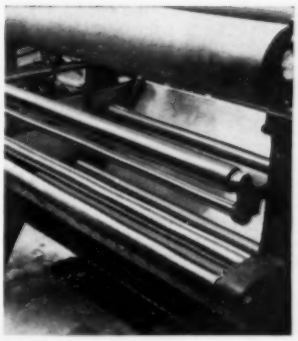
REPUBLIC

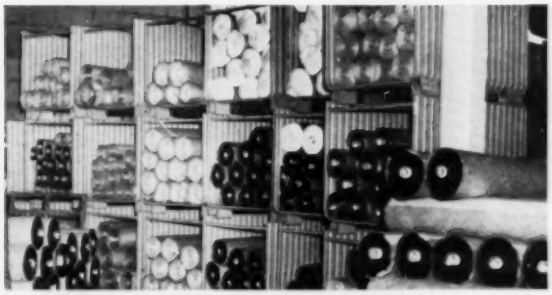
REPUBLIC STEEL

World's Widest Range of Standard Steels

← For more data, write this page number on Reader-Service card.

FAST MACHINING at reasonable cost is one reason Free-Machining ENDURO Stainless Steel Bars are used for textile machine parts, such as the rolls shown right. Parts made from ENDURO Bars also provide resistance to wear and abrasion, strength, toughness and corrosion-resistance. In addition to a complete range of analyses in cold finished form, Republic also supplies ENDURO in hot rolled bars, special sections and wire.



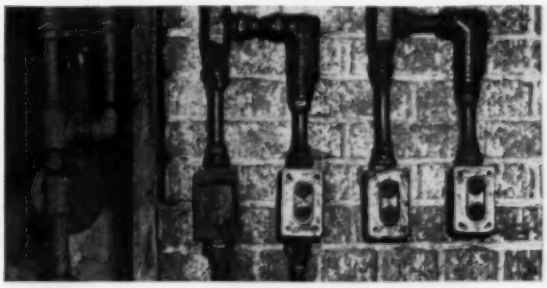


SPEED HANDLING and simplify storing with materials handling equipment designed for the job. The special units illustrated above were developed by Republic's Pressed Steel Division for a dye company. They greatly reduce the problem of handling, transporting and storing bolts of cloth. Open end construction permits easy access to bolts. Offset channels under each unit permit tiering, save space. Four-way entry permits easy handling in restricted spaces. Mail the coupon for more facts.

color changeovers

ENDURO®

Stainless Steel



RACEWAYS that resist the corrosive action of fumes and steam are made of Republic Dekoron-Coated Electrical Metallic Tubing. A polyethylene coating over a galvanized finish provides double protection. Moisture-tight, corrosion-protected joints are made by wrapping the threadless connectors and couplings with plastic tape. Dekoron-Coated E.M.T. costs less because it lasts longer. Send for Booklet DEK-3.

STEEL

and Steel Products

REPUBLIC STEEL CORPORATION
Dept. C-2339
3190 East 45th Street
Cleveland 27, Ohio

Send more information on:

☐ ENDURO Stainless Steel ☐ Dekoron®-Coated E.M.T.
☐ Free-Machining ENDURO Bars
☐ Materials Handling Equipment

Name_____ Title_____

Company_____

Address_____

City_____ Zone____ State_____

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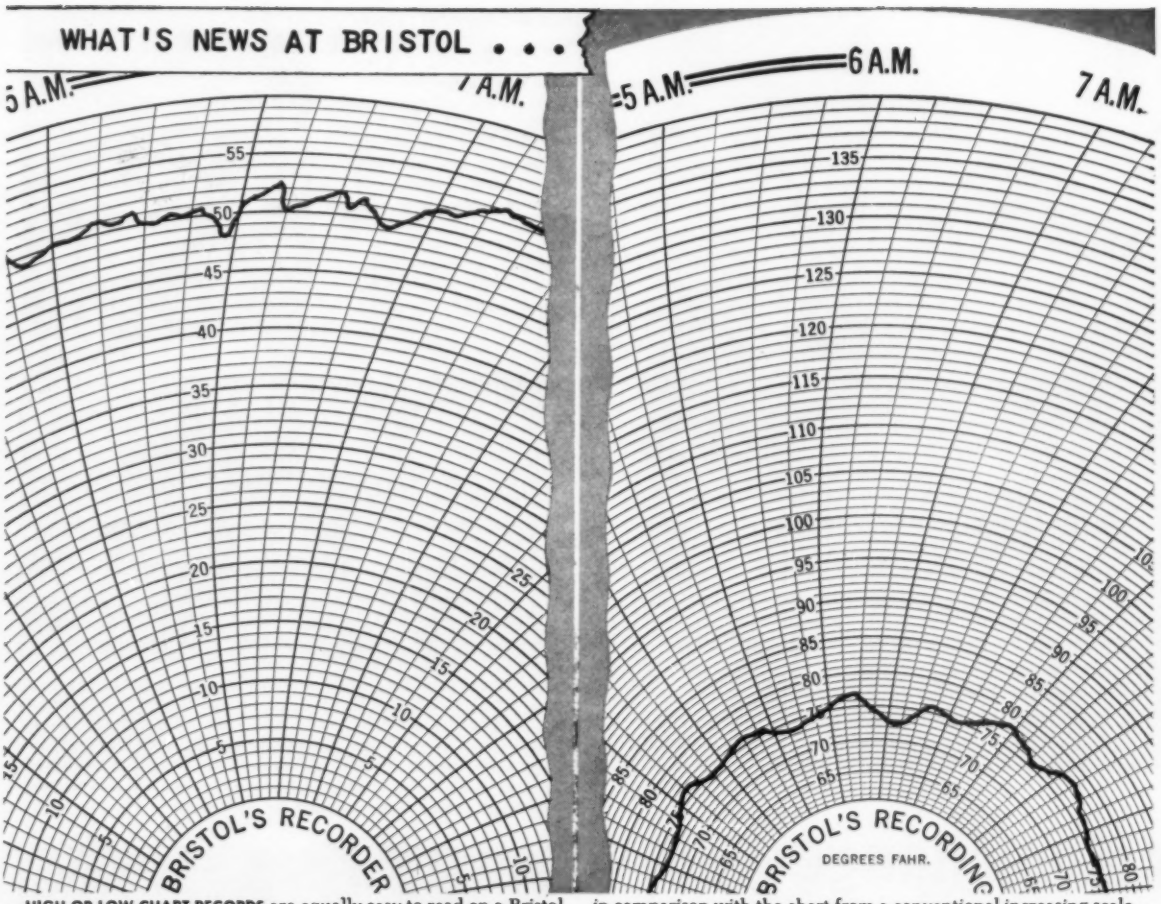


HIGH OR LOW CHART RECORDS are equally easy to read on a Bristol 2DL Recording Vapor-Pressure Actuated Thermometer . . . in comparison with the chart from a conventional increasing scale vapor-pressure recording thermometer shown above.

Bristol leads with linear scale vapor-pressure actuated recording thermometer

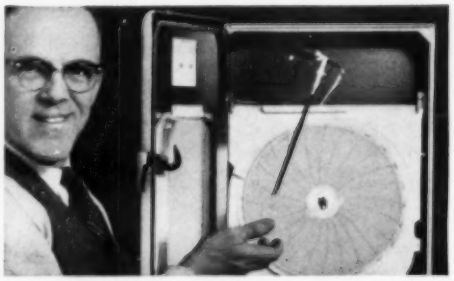
Tagged by instrument men as "the greatest advance in 25 years of recording thermometer building," Bristol's 2DL vapor-pressure actuated recording thermometer has a uniform linear scale that's equally easy to read at any point in its range.

It's another example of Bristol's "Human-Engineering" that means greater operating convenience, fewer errors, and easy visual interpolation.

MORE GOOD NEWS! In addition to this new high in readability throughout the entire measured range, Bristol has eliminated ambient temperature effects to boost the inherent accuracy of the recording thermometer still further.

GET ALL THE FACTS about these rugged precision instruments. Write today for free 48-page Bulletin T840 – it tells all about typical installations, ranges, charts, bulbs, and tubing. The Bristol Company, 103 Bristol Road, Waterbury 20, Conn.

5.20



HIGH-SPEED RESPONSE AND ACCURACY are key advantages of the new Bristol Vapor Pressure Recording Thermometers.

BRISTOL

TRADE MARK BRISTOL'S REG. U.S. PAT. OFFICE

POINTS THE WAY IN HUMAN-ENGINEERED INSTRUMENTATION

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

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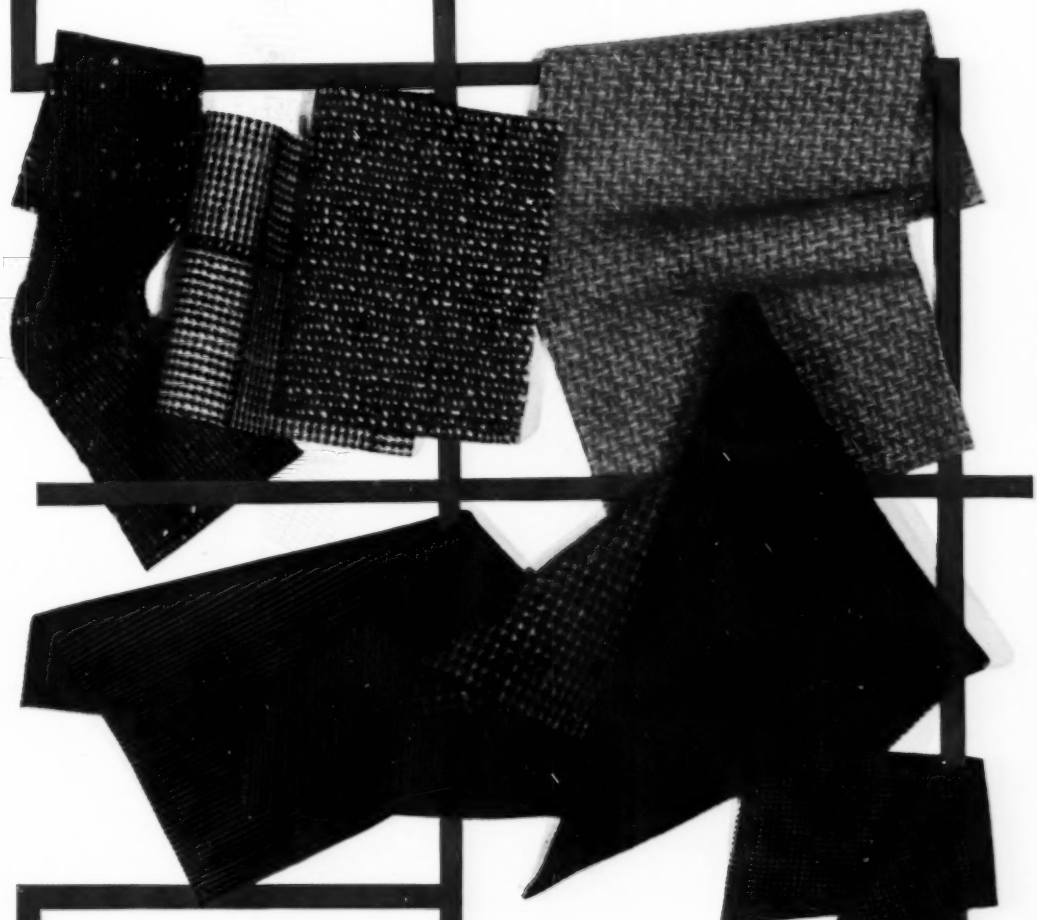
AHCOQUINONES

for wool and synthetics



AHCOQUINONE Red S — Rubine R

Violet B — Violet 3R Extra

Blue WSA — Blue ASTB — Blue AH
Blue AR — Blue BN — Blue IR
Sky Blue B — Ultra Sky SE Conc.
Blue Black B — Blue A2G

Cyananthrol R — Cyananthrol BGAH

Fast Grey BBLW — Fast Grey BLN

AHCOQUINONE Cyanine Green G
Cyanine Green GS — Cyanine
Green GN — Brilliant Cyanine
Green 5GX

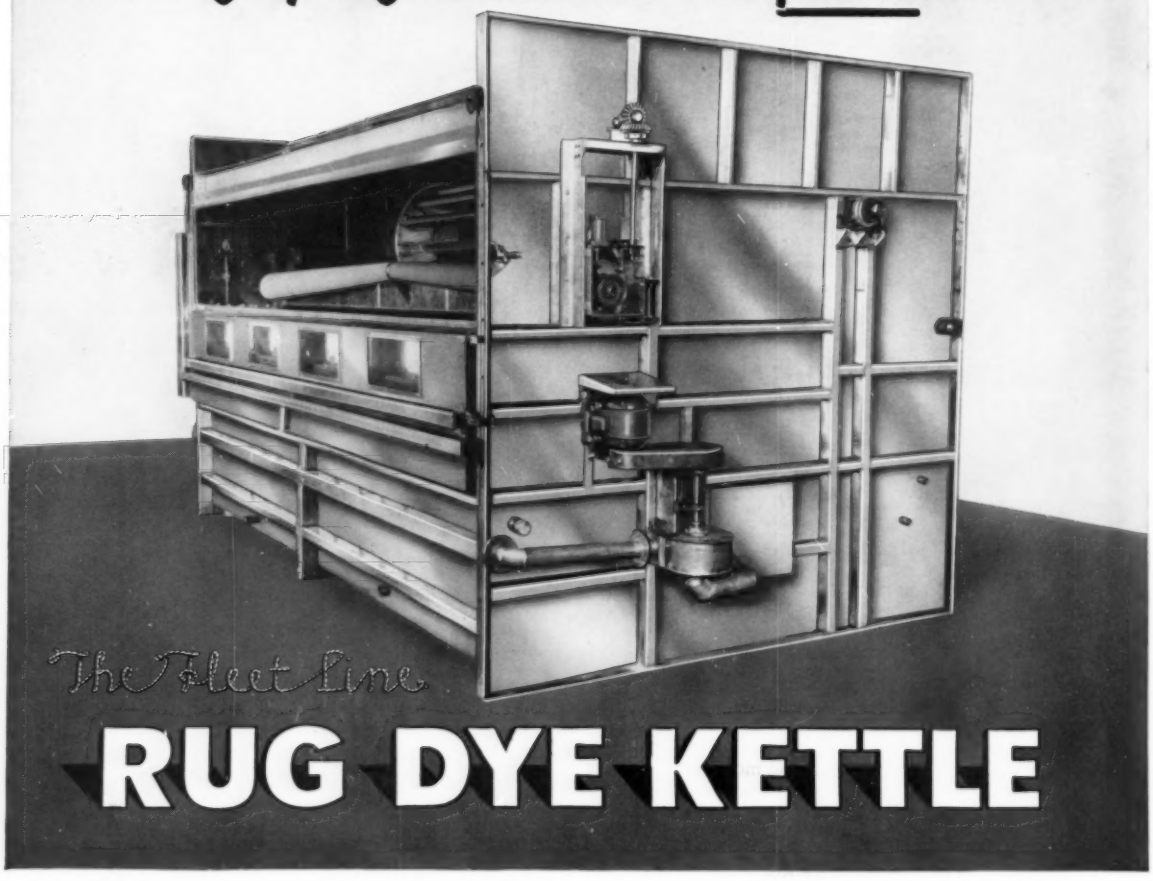
AHCO DYES

ARNOLD, HOFFMAN

ARNOLD, HOFFMAN & CO., INC. • EST. 1815
OFFICES & TECHNICAL SERVICE LABORATORIES
PROVIDENCE, ATLANTA, CHARLOTTE, TETERBORO
ASSOCIATED WITH IMPERIAL CHEMICAL
INDUSTRIES, LIMITED • LONDON, ENGLAND

D-630

For rug dyeing headaches - the proved cure is



The Fleet Line

RUG DYE KETTLE

This cost-cutting equipment has been thoroughly proved in several years of service. It enables you to do even, level, quick dyeing — side-to-side and end-to-end — of heavy materials in open width . . . cotton or any synthetics, whatever the demand may be . . . richer, thicker goods as required . . . eliminating the high cost of seconds due to uneven dyeing. You can —

Dye many varieties of weaves, keep up with the constantly changing demand for dyeing various synthetics and blends.

Double or triple the speed of your operation on many rug types by *simultaneous multiple dyeing* of different widths — with special guiders enabling you to run through various widths of rug fabric at the same time.

Write for bulletin giving all features of R & L Stainless Steel Rug Dye Kettle. We advise on all dyeing equipment problems.

R & L Rug Dye Kettle proved in service in many plants

ADVANTAGES

Dyes open widths or rope
Multiple width dyeing
More level dyeing
Faster dyeing cycle
Lower dyeing costs
Lower labor costs
Proved, assured results
Easier maintenance

RIGGS AND LOMBARD INC.

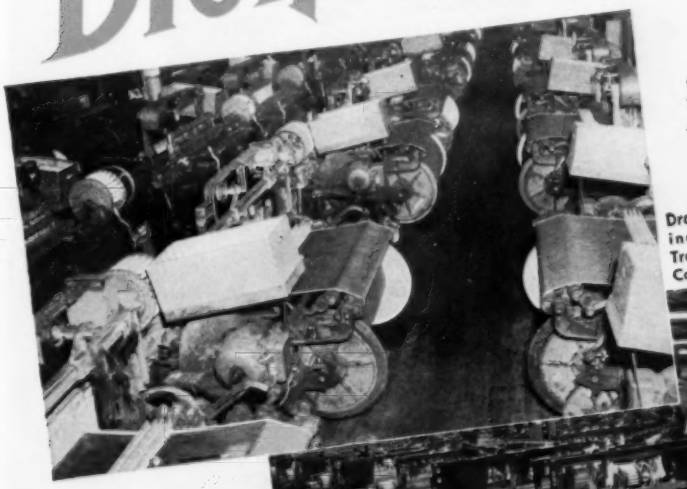
FOOT OF SUFFOLK ST., LOWELL, MASS.

Agents: Paul A. Merriam Company, P.O. Box 86, Providence, R. I., Albert R. Breen, 80 E. Jackson Blvd., Chicago 4, Ill., Larry T. Nelson, 2824 S. W. Montgomery Drive, Portland, Ore., F. W. Warrington Co., 611 Johnston Bldg., Charlotte, N. C., A. Harold Zayotti, Jr., P.O. Box 125, Riverton, N. J., H. E. Mott Co., Limited, Brantford, Ontario, Canada.

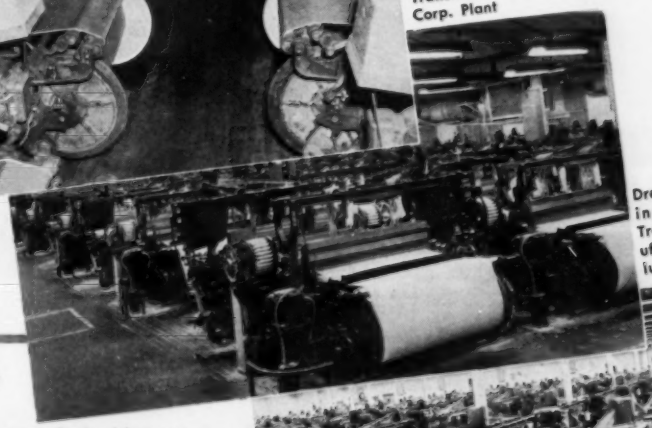
Diehl POWER TRANSMITTER

is assuring maximum weaving efficiency in leading mills

Thousands of Diehl Power Transmitters are operating DRAPER LOOMS in leading textile mills. Many have been in continuous operation for five years.



Draper X2 looms operating with Diehl Power Transmitters in Cone Mills Corp. Plant



Draper XD looms operating with Diehl Power Transmitters at Bibb Manufacturing Company, Columbus, Georgia.

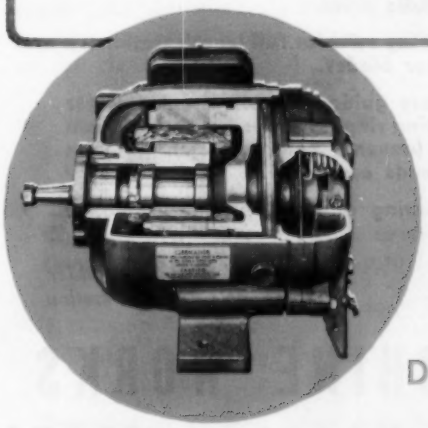
Draper XD looms operating with Diehl Power Transmitters at the Lyons Plant, Synthetic Division, M. Lowenstein and Sons.

MILL MEN ARE ENTHUSIASTIC ABOUT THESE FEATURES

- "Stored energy" for smooth, rapid starts and positive picking.
- Precision braking.
- Minimum fluctuations of speed and motor current.
- Lower power consumption.
- Lower motor heat losses.
- Eliminates current regeneration.
- Simplicity and ease of maintenance.

. . . all of which adds up to increased mill production, improved quality of cloth, lowered operating costs and long, trouble-free service.

We will welcome an opportunity to tell you—without obligation—how the Diehl Power Transmitter can bring these benefits to you.



This cutaway view illustrates the new Model "BA" Power Transmitter . . . an inverted-type high inertia motor combined with a fast, positive clutch-brake mechanism. The exclusive new design features include—frictionless and self-aligning clutch-actuating bearing . . . kinetic braking action . . . unitized clutch-brake assembly. These important advancements mean increased production . . . improved cloth quality . . . lowered operating costs . . . fewer shutdowns.

Diehl

DIEHL MANUFACTURING COMPANY

Electrical Division of THE SINGER MANUFACTURING COMPANY

Finderne Plant, SOMERVILLE, NEW JERSEY

ATLANTA · BALTIMORE · CHARLOTTE, N. C. · CHICAGO · CINCINNATI · DETROIT · MILWAUKEE · NEEDHAM, MASS. · NEW YORK · PHILADELPHIA · PITTSBURGH

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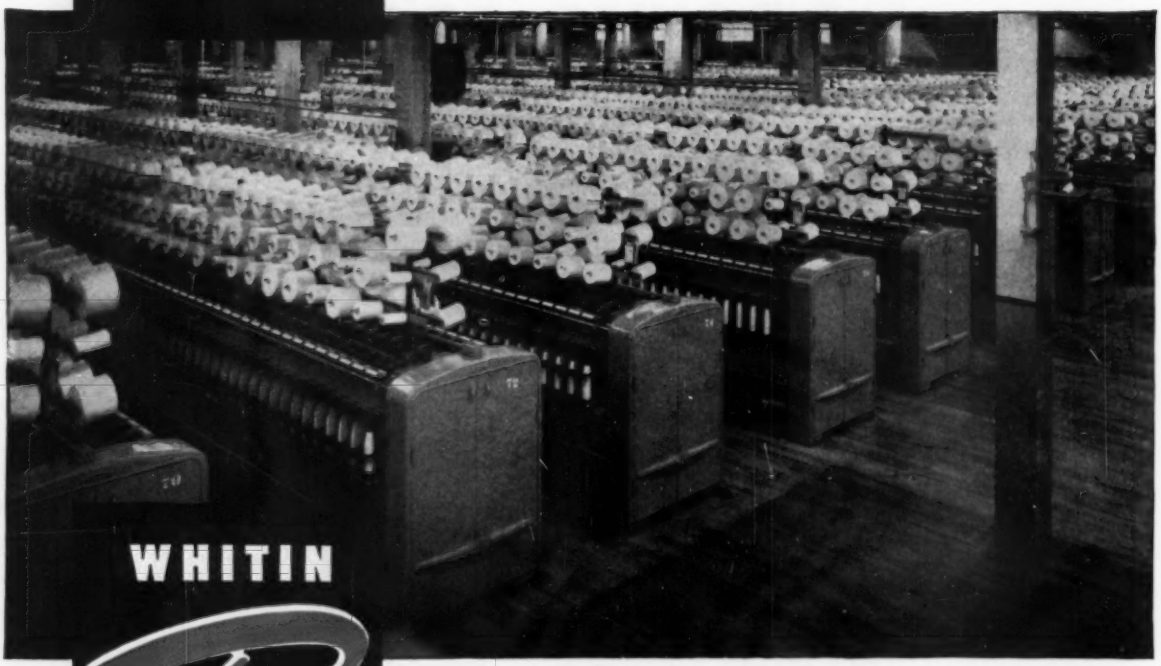

Mill installation of Whitin Pacemaker Twisters

WHITIN Pacemaker TWISTERS ...they lead the field in Production, Performance and Quality

Whitin Pacemaker Twisters have established unsurpassed performance records for their high production, quality of yarn, minimum maintenance and operating costs. For cotton and spun synthetic yarns, they are available in 3″- 6″ gauge, with traverses up to 9″, 2½″- 4½″ rings. Their notable features are:

- **Front bottom roll arrangement to provide a yarn path that is in almost vertical line from bottom of front roll to the guide.**
- **Laminated bakelite gears meshing with metal gears in the head end, for noise reduction and long wear.**
- **Spring counterbalanced ring rail.**
- **Spring weighted anti-friction tape tension pulleys.**

Also available

- **Steel pulleys on continuous drive shaft for spindle drive.**
- **Slotted ring rails for full length stationary separator blades.**
- **Stationary guide rod behind spindles for supporting ring rail traversing mechanism which prevents contamination of yarn when ends are down.**
- **Ball bearing or roller bearing spindles.**

Write today for our folder giving detailed information

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

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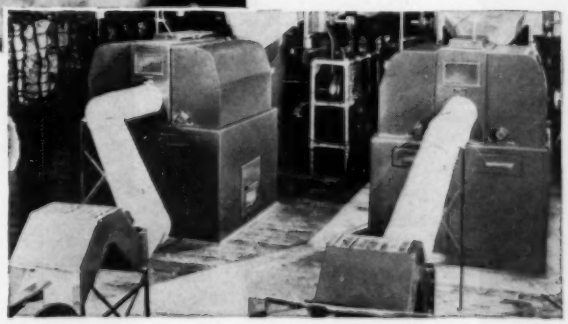
CALLED "THE MOST IMPORTANT DEVELOPMENT IN OPENING AND CLEANING IN TWENTY YEARS"

The new WHITIN AXI-FEED and AXI-FLO are fast making conventional opening and cleaning methods obsolete!

High speed photograph of interior of Whitin AXI-FLO showing cotton in process of being cleaned, further opened and blended. Note small size of tufts passing out through delivery pipe at rear.

Mill installation of two AXI-FLO units. Each is fed by a line of blending feeders.



Providing a new technique in opening and cleaning, installations of the Whitin AXI-FEED attachment for blending feeders and the Whitin AXI-FLO are now setting performance standards higher than were ever possible with conventional equipment. In addition to Opening Room benefits, many other advantages are being realized in subsequent processes because of the improved quality of the cleaned stock.

- Better Opening
  Stock opened into very small tufts
- Increased Cleaning
  Dirt removed equivalent to 2 or more conventional machines. Production up to 1800 lbs./hr.
- Additional Blending
  Unmatched blending: cotton — synthetics
- Yarn and cloth quality usually improved
  Preservation of long fibers beneficial
  Neps greatly reduced
- Costs Sharply Reduced
  Present power costs reduced by 60-75%
  Lower maintenance costs
  Low investment required

Send for full details today!

Whitin

MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA.
SPARTANBURG, S. C. • DEXTER, ME.

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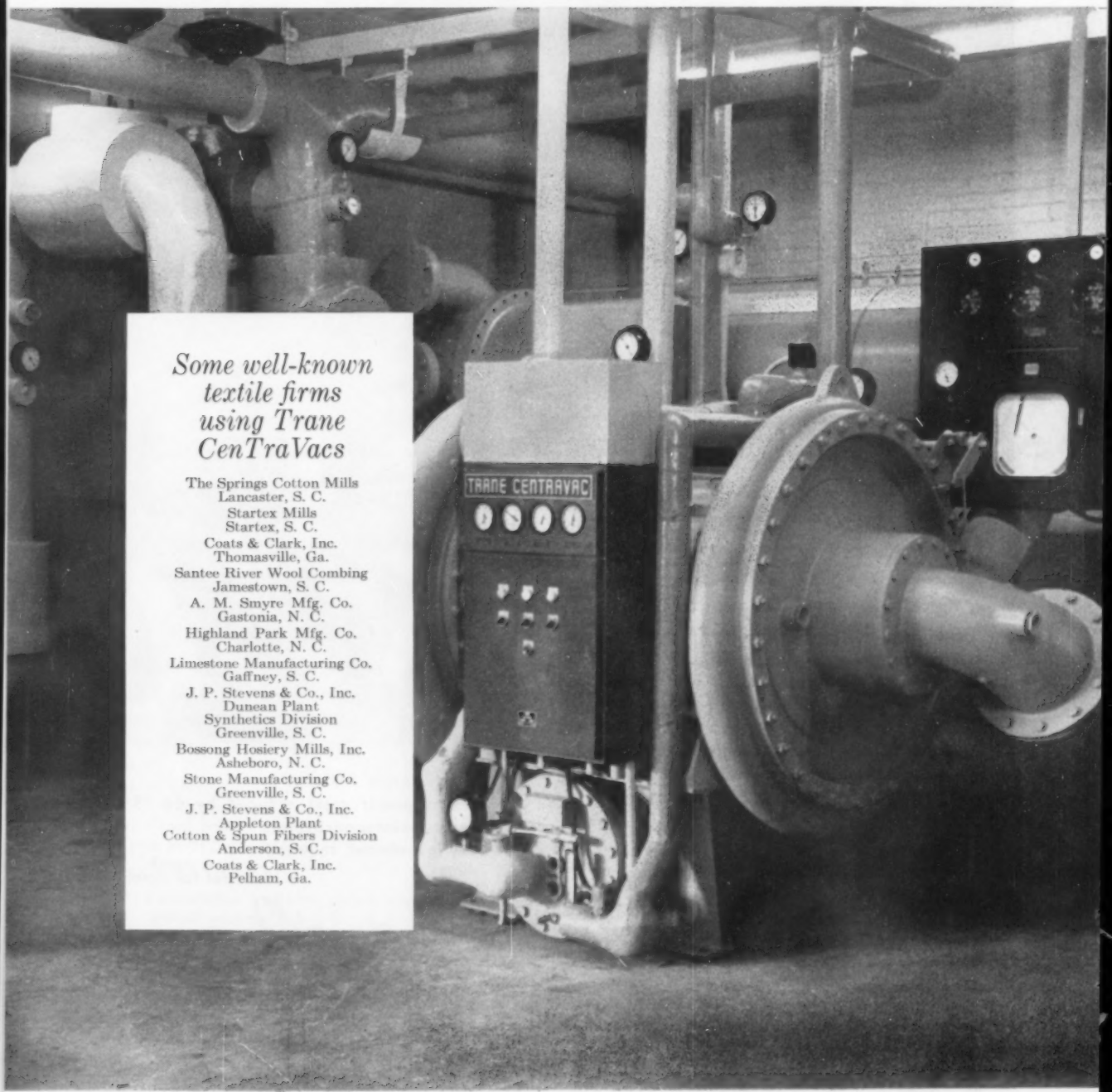
Push button air conditioning with famous Trane



Some well-known textile firms using Trane CenTraVacs

The Springs Cotton Mills
Lancaster, S. C.

Startex Mills
Startex, S. C.

Coats & Clark, Inc.
Thomasville, Ga.

Santee River Wool Combing
Jamestown, S. C.

A. M. Smyre Mfg. Co.
Gastonia, N. C.

Highland Park Mfg. Co.
Charlotte, N. C.

Limestone Manufacturing Co.
Gaffney, S. C.

J. P. Stevens & Co., Inc.
Dunean Plant
Synthetics Division
Greenville, S. C.

Bossong Hosiery Mills, Inc.
Asheboro, N. C.

Stone Manufacturing Co.
Greenville, S. C.

J. P. Stevens & Co., Inc.
Appleton Plant
Cotton & Spun Fibers Division
Anderson, S. C.

Coats & Clark, Inc.
Pelham, Ga.

The famous TRANE CenTraVac—the industry's first hermetic centrifugal water chiller. Completely automatic, it stops, starts, runs by itself . . . adjusts to varying cooling requirements with power savings in almost direct proportion to load requirements. Photo courtesy, A. M. Smyre Mfg. Co., Ranlo, North Carolina.

for any size job automatic water chillers

Now—CenTraVac units in capacities up to 1600 tons!

Just push a button to start this TRANE hermetic, centrifugal water chiller! It's completely automatic . . . runs by itself, with no full-time attendant needed. And now, you can have every benefit, every advantage of the CenTraVac's exclusive design in capacities up to 1600 tons! New large units provide the same unattended operation, same automatic modulation as the CenTraVacs now used by so many textile manufacturers.

The TRANE CenTraVac adjusts its use of power automatically, in almost direct proportion to the cooling load—from 100% down to 10% of capacity. That means you can have *partial operation* without the usual penalty in operating costs! You use just the amount of cooling you need to meet seasonal, daily or hourly requirements.

For the complete story on how TRANE CenTraVacs are helping textile plants keep air conditioning at design conditions for peak performance of men, materials and machines—call your nearby TRANE Sales Office, or write TRANE, La Crosse, Wis.

Remember . . . the Trane CenTraVac saves 3 ways!

- **Costs less to install!** TRANE CenTraVacs require no costly multi-level bases. May be set on any level surface strong enough to support its weight. Wide range of sizes makes it easy for you to pick the right CenTraVac for your cooling load requirements.

- **Costs less to maintain!** TRANE CenTraVacs have only *one* major moving part! Only two pressure lubricated bearings. There is *no* gear box . . . *no* shaft seals! Maintenance and service are routine . . . with no critical adjustments to worry about. A TRANE CenTraVac in Grand Central Station, New York City, has run *continuously*, 24 hours a day, for three years—*without maintenance!*

- **Costs less to run!** The TRANE CenTraVac costs less to operate than any other mechanical refrigeration system! You save power in almost direct proportion to load requirement . . . automatically *throttle down* to furnish just the amount of cooling needed. And there's no refrigerant leakage with a CenTraVac! It's truly *hermetic*—all working parts sealed in—no shaft seals to leak.

At famous Bossong Hosiery Mills of Asheboro, N. C., two TRANE CenTraVacs automatically provide chilled water for the air conditioning system. Each unit can unload down to 10%; stable operation is possible down to 5% of total refrigeration capacity!

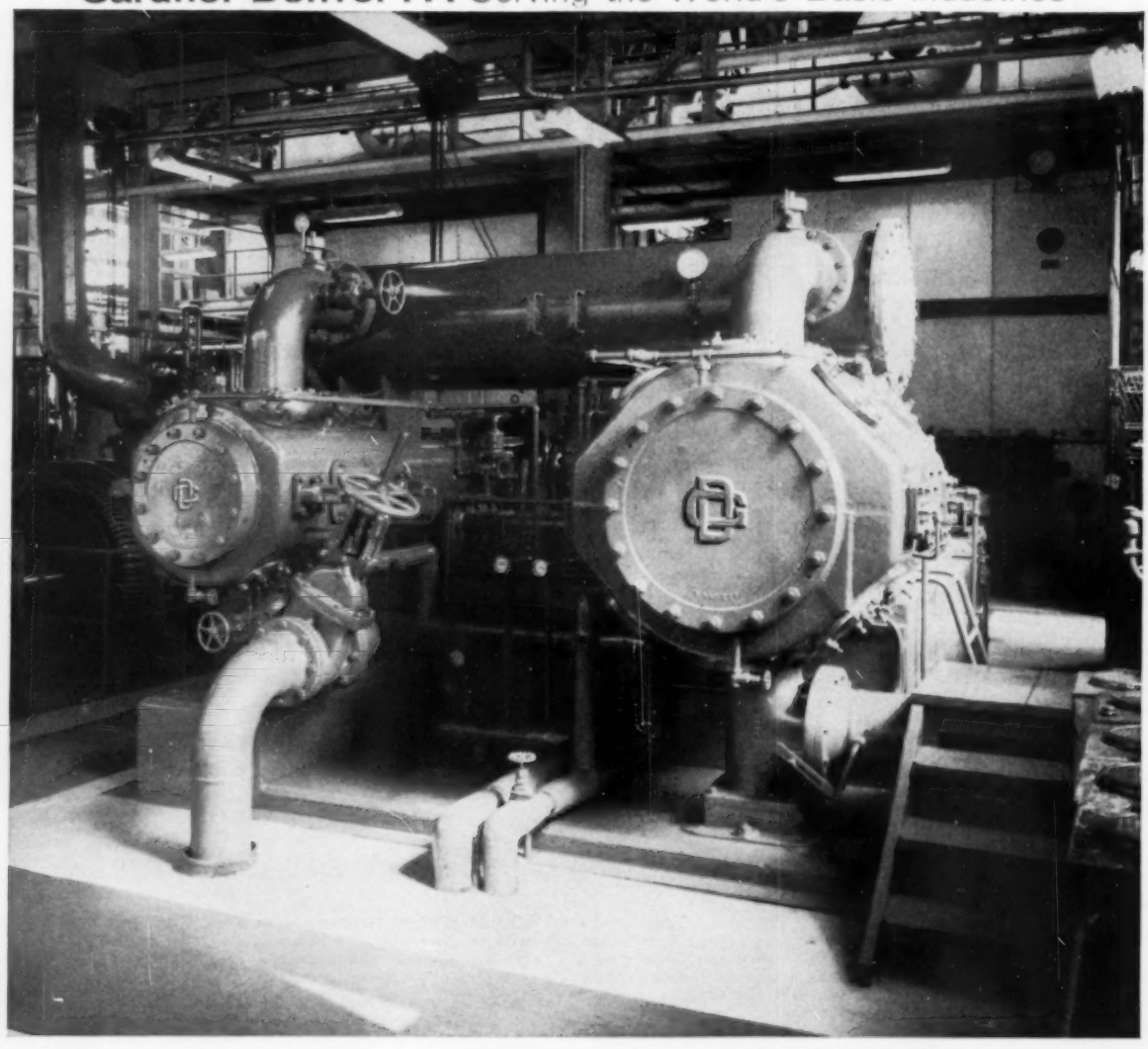
For heating, cooling, ventilating . . .
For any air condition, turn to

TRANE

MANUFACTURING ENGINEERS

The TRANE Company, La Crosse, Wis. • Eastern Mfg. Div., Scranton, Pa. • Trane Company of Canada, Ltd., Toronto
90 U.S. and 19 Canadian Offices

Gardner-Denver . . . Serving the World's Basic Industries



Model HA-530 to 2010 c.f.m. displacement.

Gardner-Denver Compressors . . . add up to a better investment

Investment dollars go far in a Gardner-Denver HA Compressor. Records of a southern foundry and manufacturing plant disclose an 8-year maintenance cost of $10.00—that's only $1.25 a year!

Add to this the fact that Gardner-Denver Compressors deliver plant air at unusually low cost figures—thanks to such outstanding features as correct air cylinder design and low-lift "air cushioned" valves. Yes, dollar-for-dollar you can't beat a Gardner-Denver Compressor.

JUST OFF THE PRESS: new Bulletin HAC-36 describing Gardner-Denver Horizontal Compressors. Your copy is ready, and will be mailed on request.

GARDNER - DENVER

THE QUALITY LEADER IN COMPRESSORS, PUMPS, ROCK DRILLS AND AIR TOOLS FOR CONSTRUCTION, MINING, PETROLEUM AND GENERAL INDUSTRY

Gardner-Denver Company, Quincy, Illinois
In Canada: Gardner-Denver Company (Canada), Ltd., 14 Curity Avenue, Toronto 16, Ontario

Atlanta, Ga.; Birmingham, Ala.; Knoxville, Tenn.; Washington, D. C.; New York, N. Y.; Philadelphia, Pa.; Pittsburgh, Pa.; New Orleans, La.; Louisville, Ky.

Sched-U-Graph unsnarls production bottlenecks!

In the textile industry, as in any other, unsnarled control of individual production orders is of utmost importance. Elimination of bottlenecks in meeting a promised delivery date builds customer goodwill and *cuts* costs for you.

The visible charting principles of Sched-U-Graph effectively provide a positive means of depicting production progress against a prearranged time schedule. Individual orders are visibly controlled from start to completion, on a day-to-day basis.

At a glance, management can check the status of any order, can schedule new orders promptly and properly so that production snarls will be virtually nonexistent.

If you have bottlenecks in any phase of your production scheduling operations, it will profit you to read KD774 (Individual Order Scheduling With Sched-U-Graph). Also, read how Cranston Print Works Company licked their order scheduling problem . . . in Case History 1049. Both pieces of literature are yours FREE . . . write Remington Rand, Room 1862, 315 Fourth Avenue, New York 10.

Remington Rand
DIVISION OF SPERRY RAND CORPORATION

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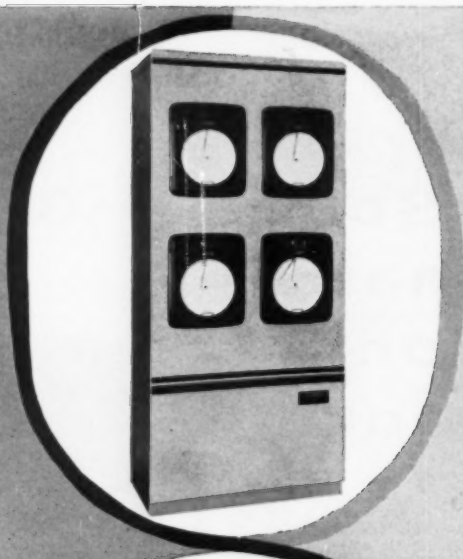
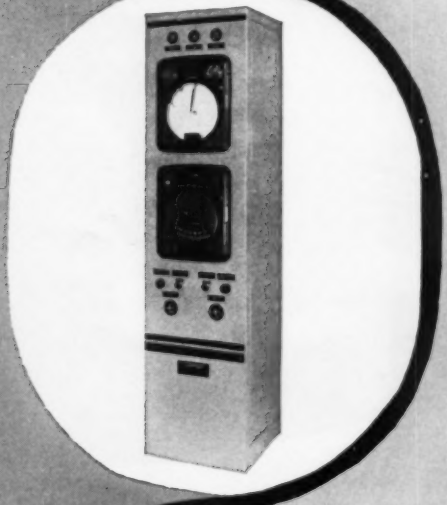
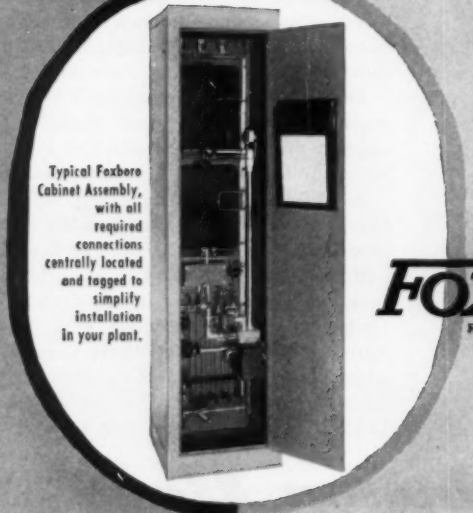
NEW!

Economical Approach to Better-Engineered Process Control!

Foxboro U-type Cabinet Installations . . .







Typical Foxboro Cabinet Assembly, with all required connections centrally located and tagged to simplify installation in your plant.

Here's the economical way to get instrument *centralization* at its best! New, low-cost Foxboro U-type Cabinets give you the same expert design and assembly that go into Foxboro's largest, most complex control panels. Here's what that means in your plant:

1. A compact arrangement of control instrumentation that saves operators' time — steps up efficiency.

2. Full-length doors at rear of cabinets makes your packaged installation completely accessible.

3. Neat, clean piping and wiring, and orderly arrangement of components, make maintenance extra-easy.

And, of course, your instruments get maximum protection from process "atmospheres" and dust. Foxboro U-type Cabinets are available in three standard sizes for 2, 4, or 6 conventional-size instruments. Specify them on your next order for new instruments — or for instruments now in your plant. Write for full details.

The Foxboro Company,
848 Neponset Ave.,
Foxboro, Mass., U.S.A.

Factories in the United States, Canada and England.

FOXBORO
REG. U. S. PAT. OFF.

PROCESS CONTROL CABINETS

$[C_6 H_{10} O_5]_n$

HUNTER CURING OVEN-DRYER

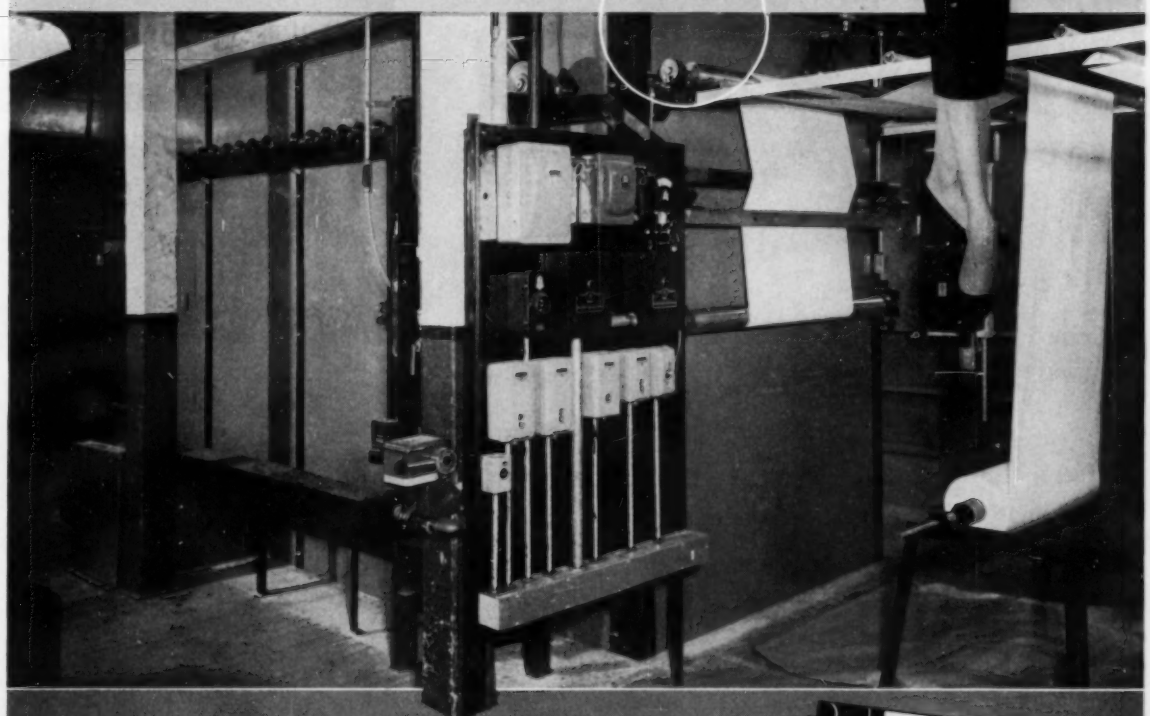
handles **ALL** *cottons and synthetics...*
cuts costs at **SLATER DYE WORKS**

At Slater, as well as at other dye works and textile mills, the HUNTER CURING OVEN-DRYER (Model B) is proving its versatility and efficiency in the curing or drying of *all* resin-treated synthetic, cotton, wool and blended fabrics.

THIS DOUBLE-DUTY UNIT HAS:

1. Even air circulation *through modern design of circulation system.*
2. Uniform temperatures *throughout the entire length and width of the oven by unique placement of nozzles.*
3. Faster, even polymerization *of resins because both sides of fabric are heated evenly.*
4. Insulated *"No-Through" metal paneling holds heat more effectively. As a dryer (69 yard capacity unit), 720 to 900 pounds of water per hour from 40" fabric.*

Get all the cost-cutting facts. Write for Bulletin CO 10 today!



JAMES HUNTER MACHINE COMPANY

BUILT BY HUNTER ...IT'S DEPENDABLE

NORTH ADAMS, MASSACHUSETTS FOUNDED 1847

plus production

- efficient operation of modern equipment
- less down time of equipment
- quick, easy repair.... rapid parts delivery

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Chrysler uses I·R·C's New Nylon

to make floor coverings and upholstery

WHY DOES CHRYSLER USE THE NEW NYLON IN THEIR IMPERIAL, CHRYSLER, DODGE AND PLYMOUTH CARS?

Because even a *small* percentage of The New Nylon, in automotive fabrics, gives wear advantages out of all proportion to the amount used. It means longer wear... it means greater crush resistance... it means less matting... it means higher abrasion resistance... based on comprehensive laboratory and practical test methods applicable to the automotive industry.

If you're making blends, or 100% nylon fabrics, look into the big advantages offered by The New Nylon Staple!

More Resiliency with less Crushability • Greater Strength
Better Luster • Better Crimp • Lower Dye Costs
Greater Resistance to Abrasion • New Economy

THE NEW Nylon Staple I·R·C

INDUSTRIAL RAYON CORPORATION

Sales Offices: 500 Fifth Avenue, New York 36, N.Y. • 627 Guilford Bldg., Greensboro, N. C.

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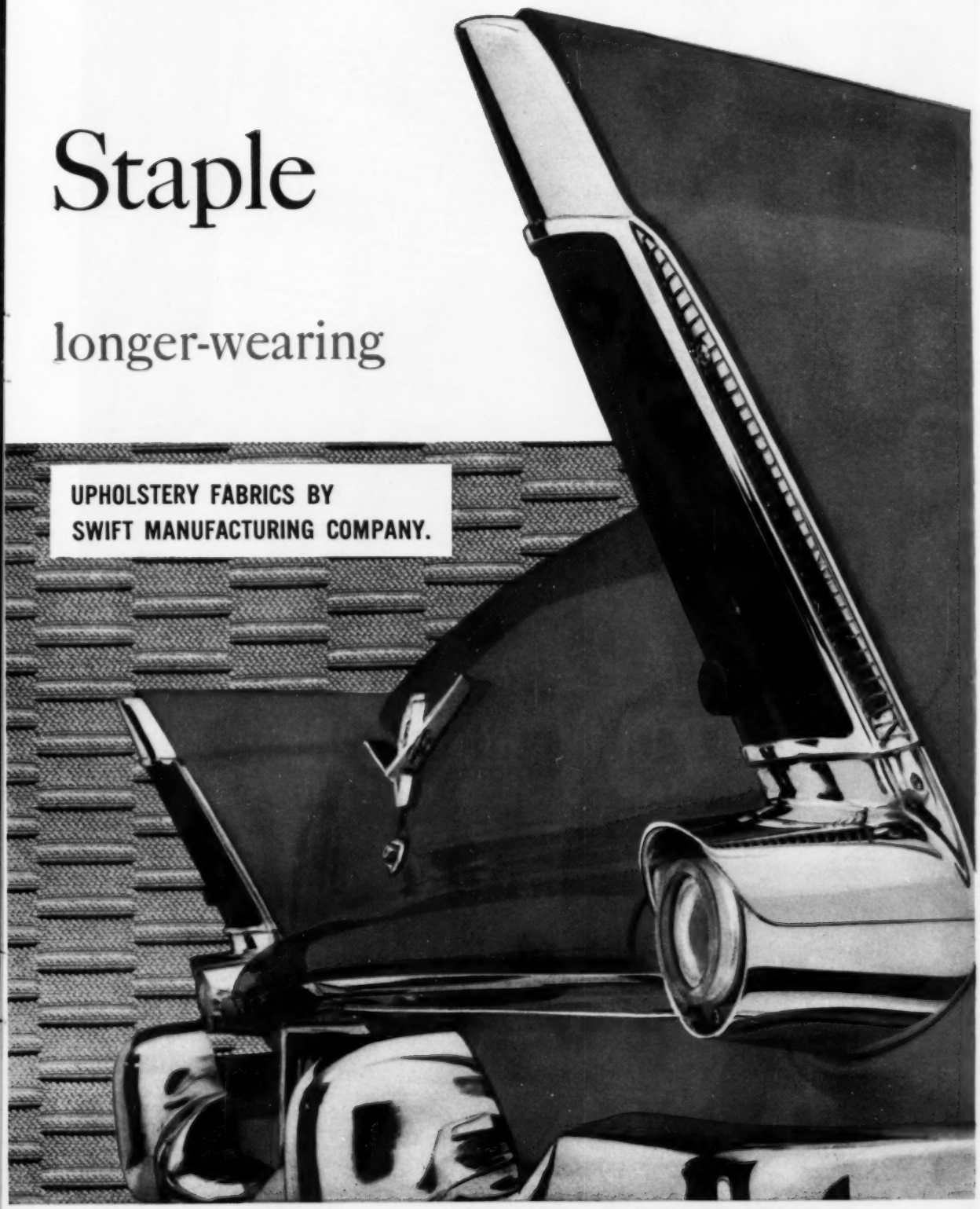
Staple

longer-wearing



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Honor Roll of PROGRESS

Alice Mfg. Co., Easley, S. C.
Greenwood Mills, Ninety-Six, S. C.
Bates Mfg. Co., York Div., Saco, Maine
Orr Mills, Anderson, S. C.
Monarch Mills, Union, S. C.
Textron Southern Riverside Plant, Anderson, S. C.
Riegel Textile Corp. Trion, Georgia
Riegel Textile Corp. Ware Shoals, S. C. Division
A. M. Smyre Mfg. Co., Gastonia, N. C.
Russell Mfg. Co., Mill #4, Alexander City, Ala.
Crown Cotton Mills, Dalton, Georgia
John P. King Mfg. Co., Augusta, Georgia
Dixie Mercerizing Co., Chattanooga, Tennessee
Swift Spinning Mills, Columbus, Georgia
Erwin Mills, Inc. Plant #3, Coolemee, N. C.
Cannon Mills Co. Plant #1, Kannapolis, N. C.
Mfg. Hartmann & Fils, Munster Haut-Rhin France
Union Cotonniere, Ghent, Belgium
Cucirini Cantoni Coats, Milan, Italy
Werthan Bag Corp., Nashville, Tenn.
Clark Thread Co. Inc., Clarkdale, Georgia
Bibb Mfg. Co. Osprey Mill, Porterdale, Georgia
LaFilature Et Le Tissage, Mehalla-Kubra, Egypt
Textiles, Inc. Mutual Plant, Gastonia, N. C.
Pacific Mills, Lawrence, Mass.
Cia. Textil "LaFe", Torreon, Coah, Mexico
Bates Mfg. Co., Edwards Division, Augusta, Maine
Cia Col. de Tej. "Rosellon", Medellin, Colombia, S. A.
P. H. Hanes Knitting Co., Winston-Salem, N. C.
Pepperton Cotton Mills, Jackson, Georgia
Cheraw Cotton Mills, Cheraw, S. C.
J. & P. Coats, Ltd., Glasgow, Scotland
Groves Thread Co. Inc., Gastonia, N. C.
Aurrera S. A., Mexico, D. F., Mexico
Hartwell Mills, Hartwell, Ga.
San Manuel, S. A., Puebla Pue, Mexico
Amazon Cotton Mills, Thomasville, N. C.
Gold-Tex Fabric Corp., Rock Hill, S. C.
Delaware Mills, Inc., Frederica, Delaware
Burlington Mills (Goodall-Sanford Div.) Hot Springs, N. C.
Collins & Aikman Corp., W. Barrington, R. I.
Samuel Hird & Sons, Inc., Garfield, N. J.
French Worsted Co., Woonsocket, R. I.
Francois Masurel Freres, Tourcoing Nord France
Linen Thread Co., Blue Mountain, Ala.
Silkose, Ghent, Belgium
Ponemah Mills, Taftville, Conn.
Denison Cotton Mills, Denison, Texas
Jackson Mills, Iva, S. C.
Dyersburg Cotton Products, Inc., Dyersburg, Tennessee
West Boylston Mfg. Co., Montgomery, Ala.
Fitchburg Yarn Co., Fitchburg, Mass.
Hamilton Cotton Co., Ltd.
West Point Mfg. Co., Shawmut Mills, Shawmut, Ala.
Celanese Corp. of America, Fairview Drive, Charlotte, N. C.
Valley Mills, Columbiana, Alabama
Piedmont Mop Co., Charlotte, N. C.
Pepperell Mfg. Co.
Wiscasset Mills, Albemarle, N. C.
Pilot Mills Co., Raleigh, N. C.
Cone Mills Corp., Minneola Plant, Gibsonville, N. C.
Marion Mfg. Co., Marion, N. C.
Hamilton Cotton Co., Ltd., Hamilton, Ontario, Canada
China Grove Cotton Mills Co., Mill #3, China Grove, N. C.
Quaker Meadows Mills, Inc., Hildebran, N. C.
Falls Mfg. Co., Granite Falls, N. C.
Alabama Mills, Inc., Clanton, Ala.
Currie Mills, High Falls, N. C.

NOW

AFTER ONLY THREE YEARS

MORE THAN 70 MILLS, OPERATING OVER 450,000 SPINDLES OF

SACO-LOWELL GWALTNEY SPINNING

are producing stronger, more even yarns of highest possible quality at important reductions in cost.

There is a definite Gwaltney trend in the spinning industry. A Saco-Lowell Sales Engineer will be glad to discuss it with you.

SACO-LOWELL
60 BATTERYMARCH STREET, BOSTON 10, MASS.
Shops at BIDDEFORD and SACO, MAINE, and SANFORD, N. C.
SALES OFFICES, CHARLOTTE • GREENSBORO • GREENVILLE • ATLANTA

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LUSTRE

that lives... for the life of the fabric!

GLITTERING
FAIRTEX® YARNS
with Metallized Mylar*

FAIRTEX Yarns with Metallized Mylar* never lose their glittering glamour . . . and outlast even the fabric itself!

Specifically developed for use in automotive fabrics, upholstery and drapery materials, mattress ticking, and hosiery, FAIRTEX Yarns with Metallized Mylar* are highly heat resistant, can be safely washed, drycleaned or scoured and do not tarnish.

There's no flaking or breaking of metal when you weave or knit with FAIRTEX.

For economy and efficiency, start using FAIRTEX Yarns with Metallized Mylar* *now* with cotton, wool, silk, linen or synthetics. You get greater yield per pound with smoother, more pliable and more uniform FAIRTEX Yarns.

*Registered Trademark for Dupont's Polyester Film

...lustre that lives... for the life of the fabric!

FAIRTEX® YARNS

Metallized Mylar* • Metallic • Supported Metallic

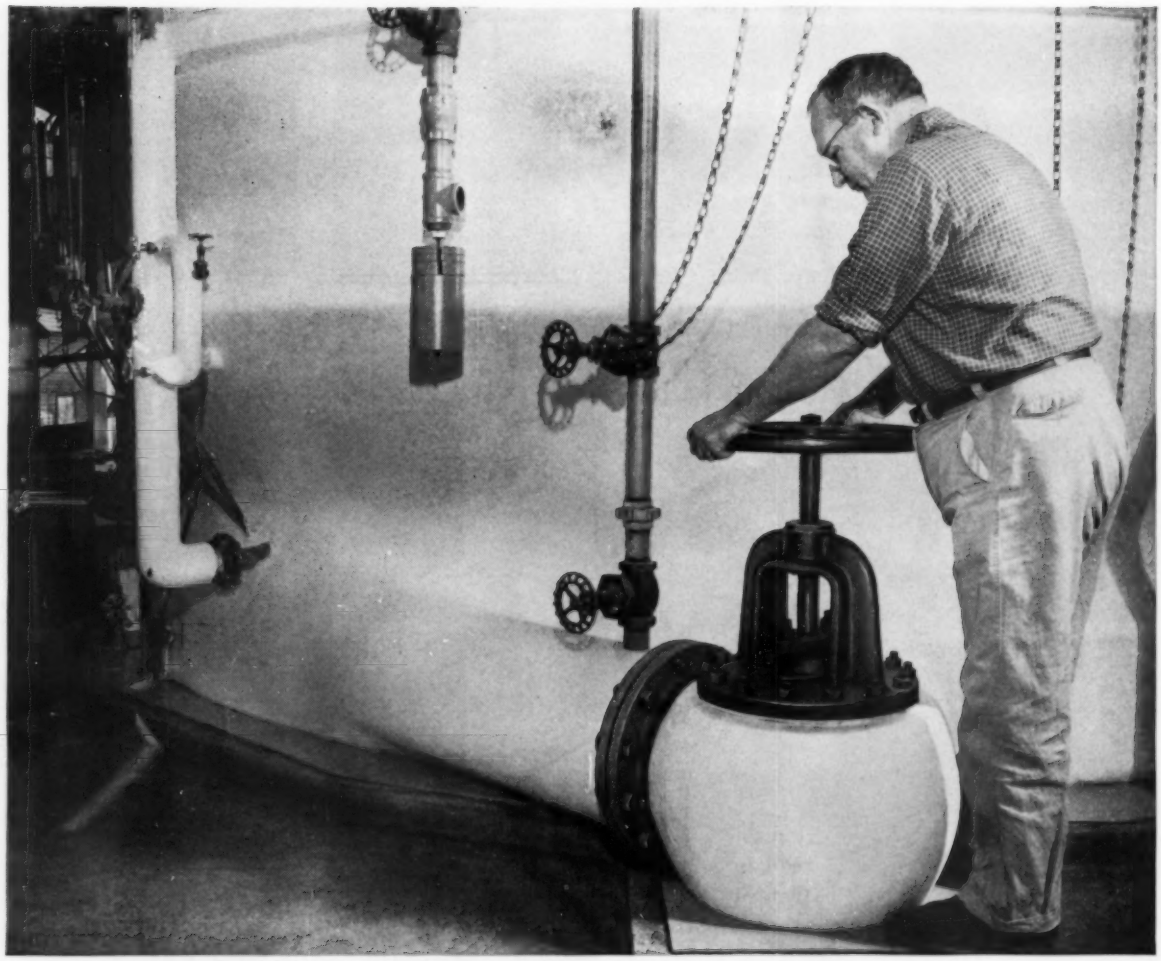
FAIRTEX CORPORATION—CHARLOTTE, N. C.

CHICAGO
Napier & Harshman
3555 Peterson Ave.

CHARLOTTE
Lonie Bonsor, Jr. and A.E. MacDougall, Jr.
1808 Liberty Life Bldg.

NEW YORK
Albert Napier
51 E. 42nd St.

For more data, write this page number on Reader-Service card. →



This Crane valve at Imperial Sugar has a sweet performance record

Six years of trouble-free performance are behind this Crane valve. It's a No. 353 12-inch iron body angle pattern.

Since 1949, this valve has been on 10 to 15 psi. steam service at 350° F., in the Imperial Sugar Co. refinery at Sugar Land, Texas—with no leakage, no service repairs, no maintenance of any kind. The valve is operated 2 or 3 times a week. Today, closure is just as tight and sure, and operation as easy and smooth, as the day it was installed.

Actually, this is only an average performance record for Crane valves on steam service. Every dimension, every design feature built into these rugged valves is precision-engineered for years and years of trouble-free operation.

It's just good sense not to take chances in selecting valves for steam service. Specify Crane and make sure you're getting the best valves made—backed by the world's greatest experience in the valve field, with the broadest line of all to choose from and the finest materials available today. Get full information from your local Crane Representative, or write to the address below.

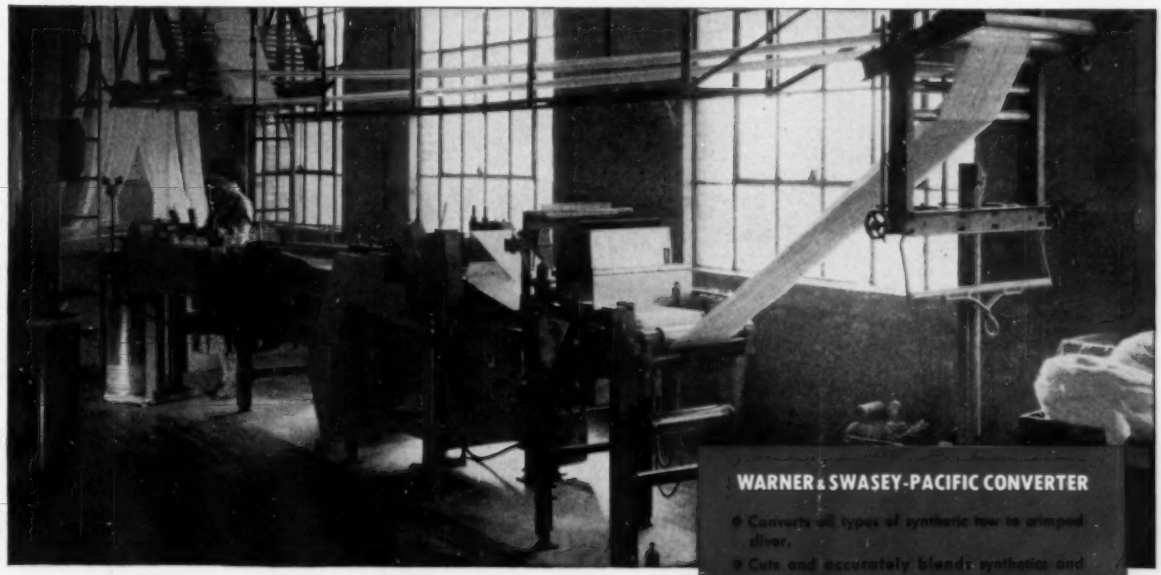
CRANE VALVES & FITTINGS

PIPE • KITCHENS • PLUMBING • HEATING

Since 1855—Crane Co., General Offices: Chicago 5, Ill. Branches and Wholesalers Serving All Areas

WARNER & SWASEY-PACIFIC CONVERTER

slashes costs on nylon yarn for Newlands!


WARNER & SWASEY-PACIFIC CONVERTER
• Converts all types of synthetic tow to crimped sliver.
• Cuts and accurately blends synthetics and natural fibers.
• Eliminates blending, carding and gilling operations.
• Heat-stretch unit gives controlled shrinkage of Orlon. Unit can be added to all existing Converters.
• High production—100 to 130 pounds per hour.

DIRECT PROCESSING of nylon tow by the Warner & Swasey-Pacific Converter has enabled Newlands Manufacturing, Ltd., Galt, Ontario, to drastically cut costs on production of nylon sweater and hand knitting yarn.

Previously, this yarn had to be processed from cut staple—a production process that eventually proved competitively unprofitable. With the Converter, this mill not only met this type of competition, but was able to cut prices.

The Converter operates 22 hours a day, producing 100 to 115 pounds per hour. Approximately 3000 pounds of their weekly production is Orlon, produced over the Converter's exclusive heat-stretch unit.

If you process synthetic or blended sliver, it will pay you to investigate the application of the Warner & Swasey-Pacific Converter to your work. Call in our Field Engineer.

Three Pin Drafter operations are also handled at Newlands by two dual delivery and one quad delivery Warner & Swasey Pin Drafters®.

SALES OFFICES

Main Office and Factory: 5701 Carnegie Avenue, Cleveland 3, Ohio
61 Rivulet St., North Uxbridge, Mass. • Suburban Square Bldg., Ardmore (Philadelphia), Pa.
121 11th Street, N. E., Atlanta 3, Ga. • 624 Pecan Avenue, Charlotte 1, N. C.

® Reg. U. S. Pat. Off.

WARNER & SWASEY
TEXTILE MACHINERY DIVISION

YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS . . . WITH A WARNER & SWASEY

For more data, write this page number on Reader-Service card. →

SES TEXTILE MACHINES *presents*

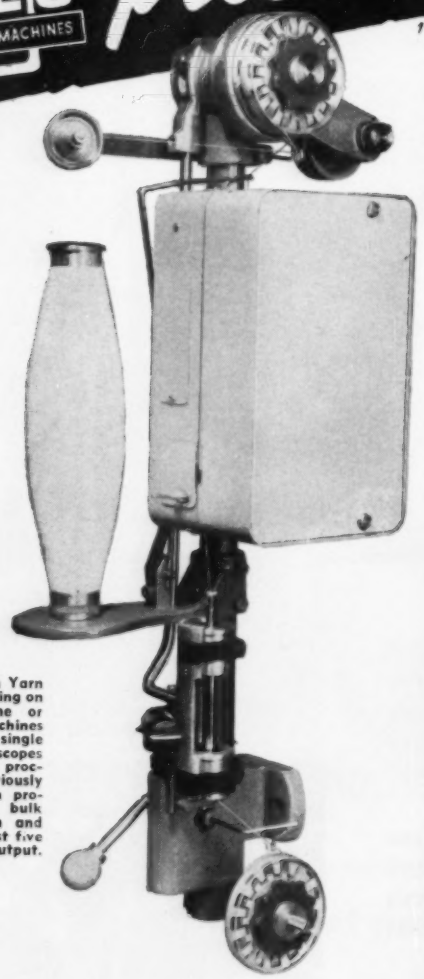
The SYDNEY & E. SCRAGG

FALSPIN

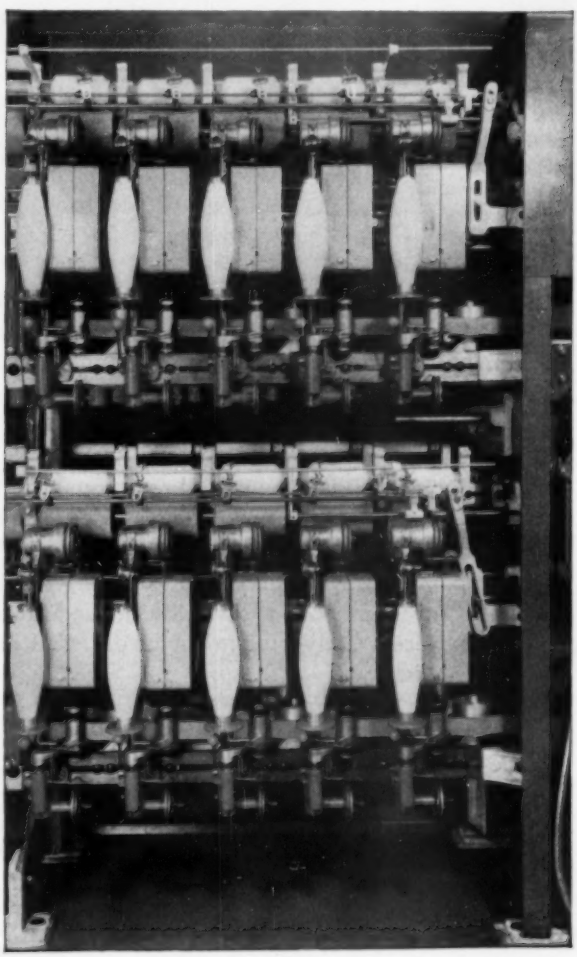
BULK STRETCH YARN UNIT

Note these remarkable features:—

- *PRODUCES CRIMPED NYLON YARN FIVE TIMES FASTER*
- *POWER CONSUMPTION IS REDUCED TO A FIFTH*
- *SUITABLE FOR NEW AND EXISTING MACHINES.*



Bulk Stretch Yarn Unit for fitting on new machine or existing machines which, in a single process, telescopes the many processes previously employed in production of bulk stretch yarn and gives at least five times the output.



Overall Power Consumption per machine is a fraction of that consumed by the normal Uptwister.

TORQUE stretch yarns in quantity, high speed false-twist method with precision quality control.

Production on **2 decks** as in normal uptwisting.

Complete heat-setting gives maximum bulk and stretch.

Results equal to original multi-stage process.

Suitable for Processing NYLON, "TERYLENE", PERLON, TRIACETATE.

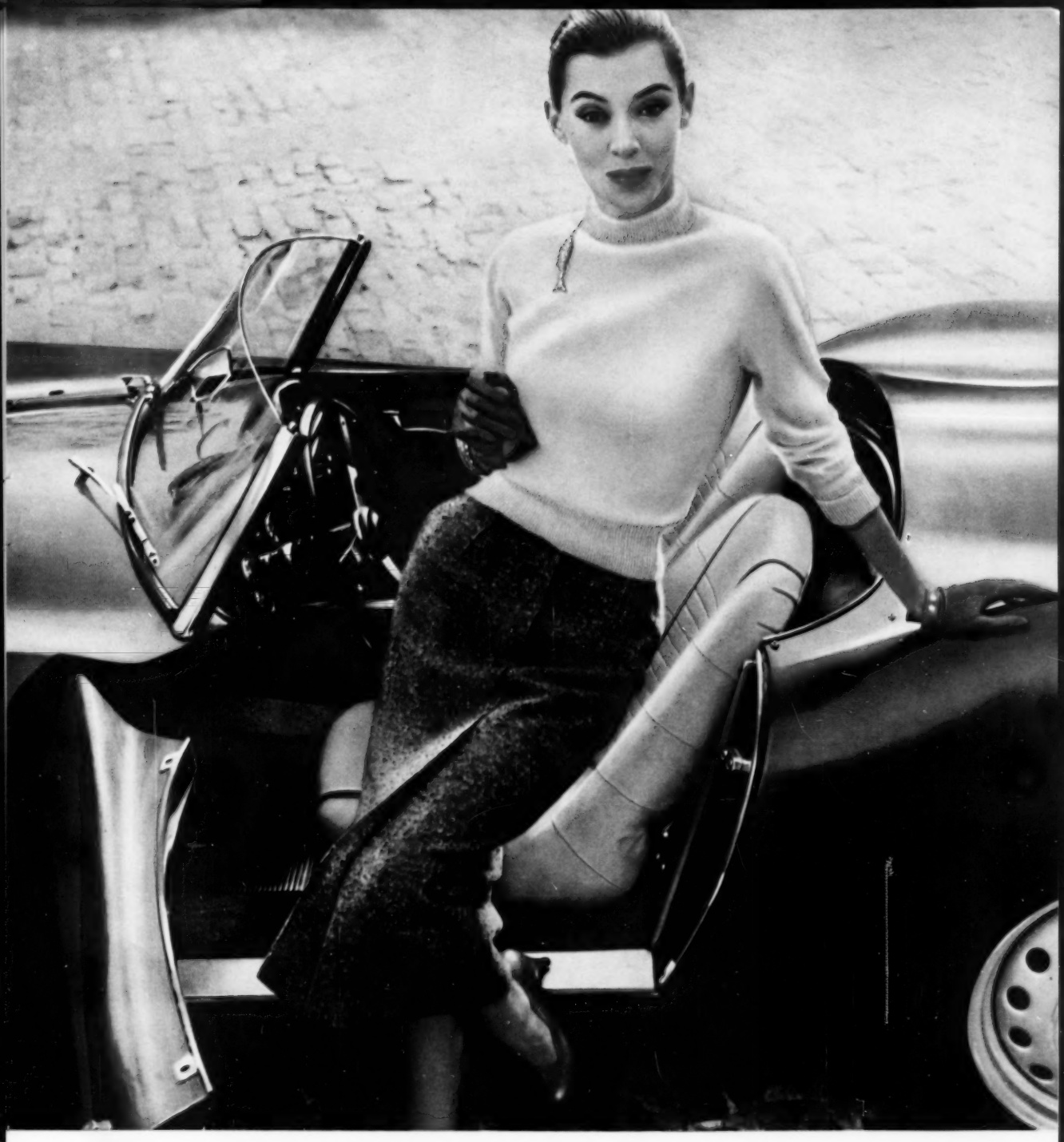
Licensed Manufacturers of
FLUFLON and AGILON MACHINES

SYDNEY and E. SCRAGG LIMITED

HEAD OFFICE & WORKS

OXFORD ROAD WORKS MACCLESFIELD

TELEPHONE: MACCLESFIELD 4661 (3 LINES)



For colors that match in materials that differ

Wherever color counts, you can count on Sandoz. You will benefit from our years of experience in meticulous color matching, from our pioneer research in the formulation of dyes for mixed fiber blends.

For example—if you are dyeing "Match Mates" of a nylon/Vicara* sweater and a wool skirt . . . Xylene Fast P dyes on the nylon/Vicara will give you the color match you need to go with the wool skirt.

We are specialists in specifics . . . in meeting the differing requirements of dyes for apparel, automotive and decorative fabrics. Whatever the problem—Sandoz experience is at your service, ready to produce effective and profitable results. SANDOZ CHEMICAL WORKS, INC., 61-63 Van Dam St., N. Y. 13, N. Y., ALgonquin 5-1700.

*T.M. of Virginia Carolina Chemical Corp.

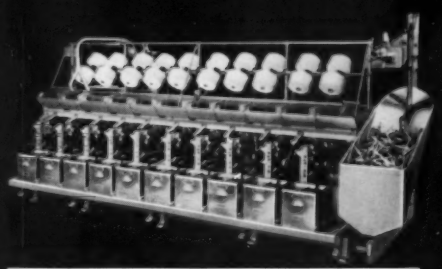
SANDOZ

SANDOZ THINKS AHEAD WITH TEXTILES

Schärer

The High Speed Fully Automatic Quiller

for cotton and spun rayon, speed variable from 8,000 to 11,000 revs.



Advantages:

Simplicity of design
assures lowest installation and maintenance cost

Patented no tailing
device completely eliminates tails on full bobbins

Produces uniform bobbins
with more yarn per package

Exclusive combination blower and vacuum
keeps machine and yarn cleaner

Only one motor used to operate entire machine

We invite you to see these machines in operation at the Southern Textile Exposition, Greenville in annex 6

Schärer Textile Machine Works
Erlenbach/Zurich (Switzerland)

Sold and serviced in the United States by
Yeomans Textile Machinery Company
P. O. Box 1661, Spartanburg, S. C.

In JENKINS *Monel-seated Bronze Gates*

THE WEDGE* TAKES THE WEAR - *and spares the rings*

Easy replacement of the wedge only — right on the line — restores full efficiency

THE MONEL SEAT RINGS are expanded into the body to assure a positive, leak-proof joint. Exhaustive tests in typical monel-seated gate valve services show that this permanent all-around support of the rings is essential to guard against deforming, loosening, or shifting.

***THE RENEWABLE WEDGE** (bronze or nickel alloy) has excellent wear resistance, but has a lower degree of hardness than the heat-treated Monel rings, which have optimum resistance to erosion and corrosion as well as abrasion. Thus, wear of the wedge leaves the rings relatively unaffected. When necessary to renew the wedge, you simply remove the valve bonnet, slip the old wedge off the stem, and slip on a new one.

GET PRACTICAL, LOW-COST RENEWABILITY in the valves you choose for the tough, punishing services that require Monel-seated gates. Compare . . . there is nothing simpler, faster, or more economical than Jenkins replaceable wedge design — and you also get the *plus* of Jenkins *extra value* in every other feature. Jenkins Bros., 100 Park Ave., New York 17, New York.

***MADE WITH BRONZE OR NICKEL ALLOY WEDGE**

The bronze wedge provides lasting economy for most applications. The nickel alloy wedge provides extra resistance where rapid wear and corrosion are factors.

JENKINS BRONZE GATES WITH MONEL SEAT RINGS

200 psi	300 psi
Fig. 270-U, Bronze Wedge	Fig. 280-U, Bronze Wedge
Fig. 270-UN, Nickel Alloy Wedge	Fig. 280-UN, Nickel Alloy Wedge
Fig. 270-UL, Bronze Wedge, U.L. approved for L.P.G. Services	350 psi
	Fig. 280-UX, Bronze Wedge

JENKINS BRONZE GATES INCLUDE 40 DIFFERENT PATTERNS

125 • 150 • 200 • 300 • 350 psi SOLID WEDGE • SPLIT WEDGE
SCREWED • FLANGED • SOLDER END • SOCKET END QUICK OPENING

Call your local Jenkins Valve Distributor for complete information.

JENKINS VALVES

LOOK FOR THE JENKINS DIAMOND

SINCE 1864 TRADE JENKINS MARK

Jenkins Bros.

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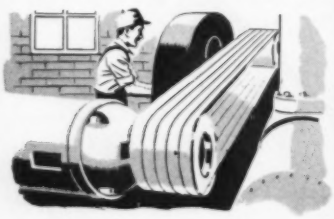
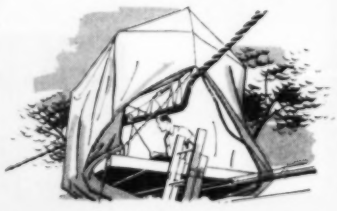
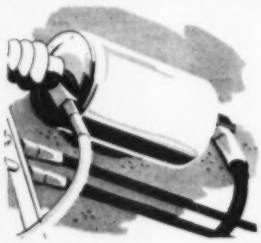
new Fortisan-36 rayon fiber scores with weavers and throwsters



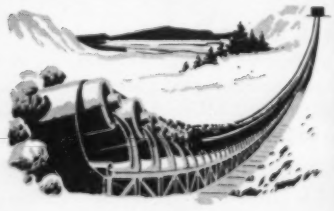
V-BELTS: Used as reinforcing cord or as cord fabric, dimensional stability makes possible matching belts. Cords are highly stable under atmospheric changes or work.



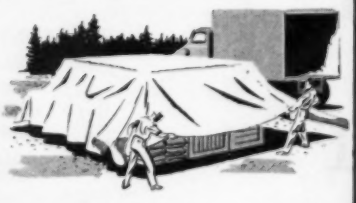
LINESMEN'S TENTS: Vinyl-laminated FORTISAN-36 fabric lets telephone linesmen work in the light. Translucent plastic can be used since FORTISAN-36 resists light degradation.



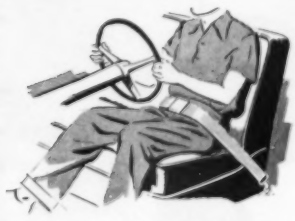
HIGH-PRESSURE BRAIDED HOSE: FORTISAN-36's superior weight and strength qualities permit lighter, safer, more flexible and pressure-resistant hose for general high pressure use.



CONVEYOR BELTS: FORTISAN-36 produces extremely strong yet thinner, lighter-weight belts. Good troughing qualities permit higher tensions and longer distances between centers.



TARPAULINS: Elastomer coated FORTISAN-36 flat yarn woven fabrics maintain dimensional stability and strength during processing and use; have excellent tear and puncture resistance.



WEBBING: FORTISAN-36 tent, cargo tie-down and automotive safety belt webbings woven with stuffer construction feature high strength, and good dimensional stability.

If you sell to the mechanical rubber goods, coated fabric and similar industrial markets, FORTISAN-36 can help put your product at the head of the parade.

This new high-tenacity, heavy-duty rayon made by saponification of acetate is fast becoming the fiber of choice for uses requiring

- **High tensile strength**
- **Minimum elongation**
- **Dimensional stability**

What's more, FORTISAN-36 is re-writing the book on weight/strength ratios for standard construction. Take a 42-oz. cotton fabric widely used in the rubber industry. You can actually duplicate its strength specifications with a fabric weighing only 21 oz. by using a Fortisan-36 warp of equivalent strength!

Write today for booklet TD 20A containing all the facts and figures on FORTISAN-36.

Celanese Corporation of America, Industrial Sales Dept., Textile Division, Charlotte, North Carolina. *Branch offices:* 180 Madison Avenue, New York 16; Pilgrim Square Building, 9 Overwood Road at W. Market St., Akron 13, Ohio (Telephone: TE 6-2392). Celanese®

Celanese

Fibers for Industry

FORTISAN® RAYON • FORTISAN®-36 RAYON • ARNEL® TRIACETATE • ACETATE • VISCOSE-RAYON

We say this without reservation—will back it up with proof:

New Balanced Mobil D.T.E. Oils Can Improve Your Production And Reduce Manufacturing Costs

For years Mobil D.T.E. oils have set the standard of quality for all hydraulic and circulating oils. Recently they were dramatically improved—so much so that their margin of superiority is now greatly increased.

New Mobil D.T.E. oils are *balanced* to meet the widest range of operating conditions. They will give years of trouble-free service—even in continuous high temperature circulating systems. They will keep your machines free from deposits over the complete range of service. They will give you the highest degree of protection against wear...rust...corrosion. In fact, tests show *most machines will become obsolete before these oils need changing* when operating at normal temperatures.

Let us show you concrete *proof* that new balanced Mobil D.T.E. oils can improve production and cut manufacturing costs. Ask your Mobil representative for the "balanced" story.

SOCONY MOBIL

FIRST STEP IN CUTTING COSTS

SOCONY MOBIL OIL COMPANY, INC., and Affiliates: MAGNOLIA PETROLEUM COMPANY, GENERAL PETROLEUM CORPORATION

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A Message to Management about DRYING EQUIPMENT

No. 3 in a Series

SPECIALIZATION

THE PURPOSE of this series is to provide "signposts" which will guide textile management to the *best drying equipment*. We submit that the best in drying equipment is mandatory. For when cotton, wool or synthetic fibres reach the dryer, their original raw value has been multiplied many times. No mill can afford to take chances at this point.

The "signpost" which we will discuss in this message is SPECIALIZATION.

WHY SPECIALIZATION?

In the professions, specialization has, for generations, been an accepted principle. The reason is obvious. No one human being, no matter how brilliant, can possibly learn all there is to know about all phases of medicine, chemistry, physics, surgery, law, education, etc. Therefore, to make himself an *authority* he must limit his scope of activities. This specialization in certain professions, without a doubt, is responsible for the tremendous material progress that this country has made in the last half century.

SPECIALIZATION IN INDUSTRY

If specialization has made for faster progress in the professions, it should (as in our own case) make for faster progress in industry. There always has been a certain amount of specialization in industry, of course. However, specialization is not so popular here as in the professions and there is a trend in the opposite direction at present. There is a very good reason for this. It is that specialization in industry narrows the market and hence limits the sales potential. Therefore, the manufacturer who *successfully* specializes *has* to be good.

We have specialized in textile drying, conditioning and ventilating equipment since 1920. Obviously we have stayed in business and prospered that long because our products are properly designed, efficient and economical to operate. Steady customers, such as Union Bleachery, Dan River Mills, Inc., Springs Cotton Mills (Grace Bleachery), Southern Bleachery & Print Works, United Merchants & Manufacturers, Inc., Pepperell Manufacturing Co., Lyman Printing & Finishing Co., Inc., Riegel Textile Corporation and Cone Mills will, we believe testify to that effect.

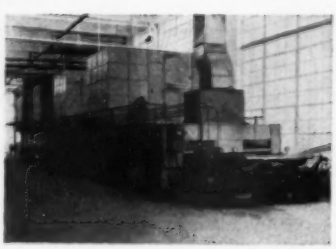
We have also prospered because we have *concentrated* on one thing — how to make better and better drying, conditioning and ventilating equipment. And to prove that we *have* made better and better products, we repeat herewith some of our achievements.

1. Our latest models will air dry in 10 seconds or less cloth which it took half a minute to air dry prior to World War II.
2. We produced the first high velocity jet all steel tenter dryers.
3. We produced the first air impingement dryers for print machines.
4. We produced the first humidifier type cloth conditioners.
5. We produced the first roller type air impingement dryers and predryers.
6. We produced the first gas heated cloth dryers (see paragraphs 2 and 5 for types.)
7. We produced the first bucket apron stock dryers.
8. We produced the first air impingement warp dryers.
9. We produced the first air impingement carpet dryers.
10. We produced the first roller type two stage steam heated curers.
11. We produced the first roller type two stage gas heated curers.

The foregoing are only some the the fruits of A & G SPECIALIZATION. These and all other A & G Products have been constantly improved over the years and adapted to all types of fibres, fabrics, dyes and finishes. They are as new as tomorrow, yet have no untried features.

Learn about other signposts which point to A & G — the best in drying, conditioning and ventilating equipment. Send for reprints of this and other "messages" in the series.

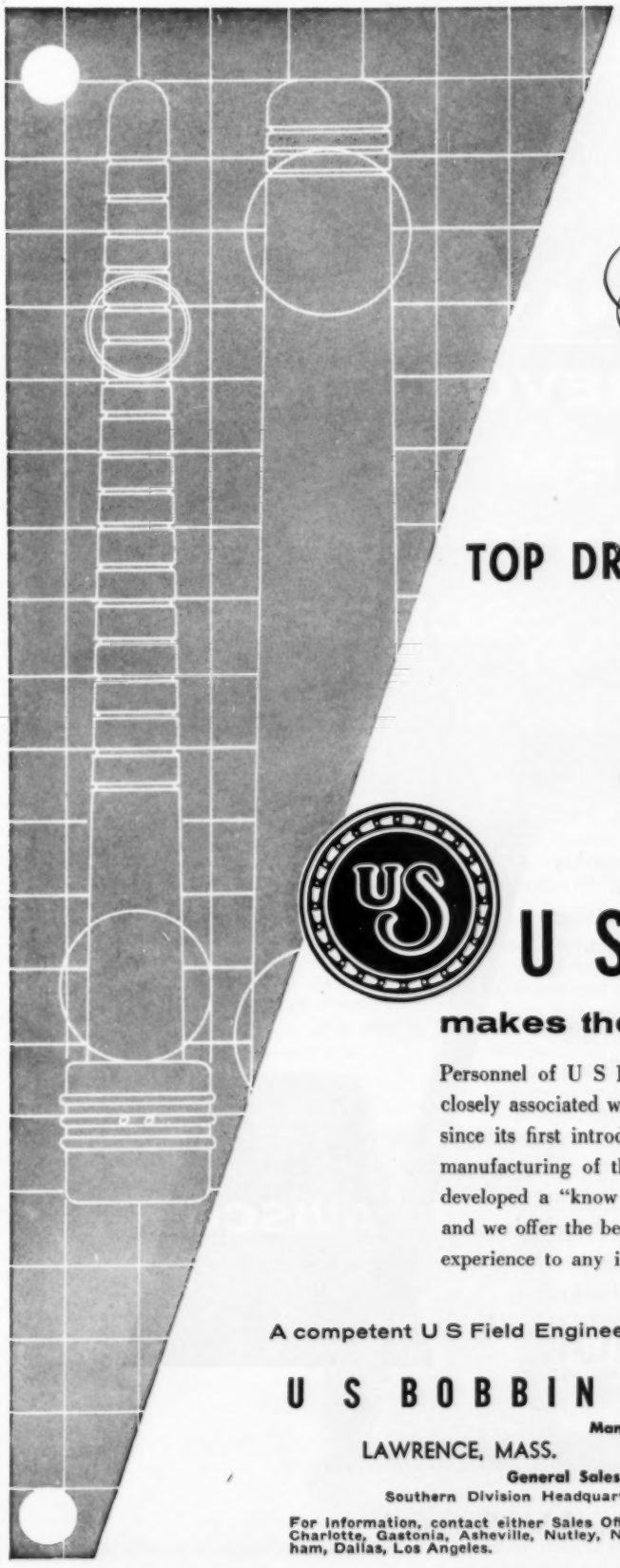
A & G TENTER DRYER FOR COTTONS. Widely used by leading textile mills. Can be built for a wide range of capacities and fabrics and adjusted so tentering process will improve fabric quality. Other features include uniformity of drying from back to face and edge to edge; the fact that temperature and rate may be adjusted during drying cycle to suit requirements of fibre and fabric; high capacity without distortion; maintenance of cloth width regardless of construction.

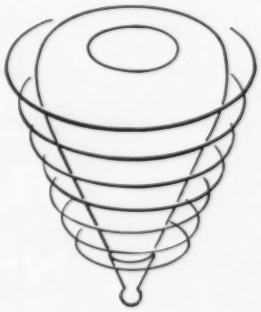


ANDREWS and GOODRICH, Inc.

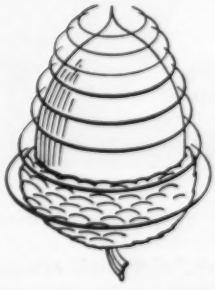
336 Adams Street, Boston (Dorchester), Mass.

Southern Representatives: McSpadden & Scantland, Charlotte, N. C.





TOP DRIVE or ACORN DRIVE?



U S BOBBIN

makes the BEST of both!

Personnel of U S Bobbin & Shuttle Co. have been very closely associated with the Top Drive principle in the bobbin art since its first introduction to American mills. In the manufacturing of these quills and warp bobbins we have developed a "know how" of which we are justly proud . . . and we offer the benefits of this valuable accumulated experience to any interested mill.

A competent U S Field Engineer will contact you promptly, on request.

U S BOBBIN & SHUTTLE CO.

Manufacturing Plants

LAWRENCE, MASS. • GREENVILLE, S. C.

General Sales Office LAWRENCE, MASS.

Southern Division Headquarters: 428 Birnie St., GREENVILLE, S. C.

For information, contact either Sales Office; or our Technical Field Representatives located in Charlotte, Gastonia, Asheville, Nutley, N. J., North Attleboro, Mass. Supply Houses: Birmingham, Dallas, Los Angeles.

For more data, write this page number on Reader-Service card. →

AVISCO RAYON BUILDS REVOLUTIONARY NEW TOUGHNESS INTO ABRASIVE SCREENS

"Scrim" cloth, made with rayon, has resulted in a tough new sand screen that lasts 7 to 15 times longer than conventional abrasive discs.

American Viscose worked with The Carborundum Company in developing this superior product.

Two things explain its extra life:

First, removed material flows out through the open mesh.

Second, the screen is made from AVISCO rayon filament yarn that stays "young and muscular" even when loaded with phenolic resins and abrasives.

Perhaps AVISCO rayon could help you improve a present fabric or create a new one. Just drop us a line or give us a call.

American Viscose Corp., 350 Fifth Ave., New York 1, N.Y.

AVISCO

America's Greatest Industries Grow with **AVISCO**®

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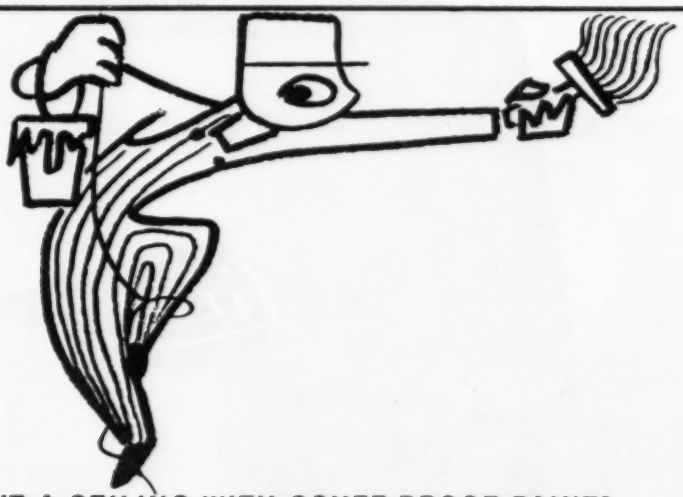

WHY PAINT A CEILING WITH SCUFF-PROOF PAINT?

WHY BUY METALLIC YARNS WITH USELESS BENEFITS?

ALISTRAN*

GIVES YOU WHAT YOU NEED!

You like extras? Frou-frou? Like to pay more for something you can't possibly use? Then please don't read this ad — it's not for you.

But — if you're looking for the metallic yarn benefits which you require for your *specific* application . . . and that's 70-80% of the time . . . Alistran's your shining answer!

This means that 70-80% of the time you can save considerable money. Or, to put it conversely, you can keep from *wasting* money and still get all you need *plus!*

For example, Alistran gives a fabric some 20% more brilliance simply because it can be loomed or knitted *unsupported*. What's more, you gain from 15-20% in fabric yield. And, you'll find, Alistran has twice the strength of ordinary metallic yarns.

Want more? O K — Alistran is non-tarnishable, dry-cleanable, moth-proof, stain-resistant and exceptionally long wearing. It comes in custom colors . . . wound on non-shrink metal spools. You can use it on any type of loom or knitting machine. You can use it braided, woven, twisted. For loom-finished, resin-set or siliconized jobs.

But judge for yourself. Drop us a line or phone us and we'll send you samples of Alistran ABSOLUTELY FREE. And, if you have any questions at all about metallics we're your quiz whizzes. You may never know unless you call.

MULTI-TEX PRODUCTS CORP.

56 ELM ST., NEWARK 5, NEW JERSEY

MARKET 3-1021

ASK FOR ALISTRAN — *the metallic yarn proven successful by years of industry-wide controlled use.*

* Reg. U. S. Pat. Off.

For more data, write this page number on Reader-Service card. →

For open-wind packages, any type... the Leesona Roto-Coner®

This popular open-wind machine features versatility, high quality, and low cost production. It offers real opportunities for economy with large package spinning.

Here are some reasons why many leading mills have replaced obsolete winding equipment with Leesona Roto-Coner drum winders:

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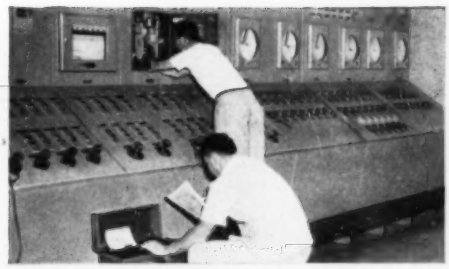

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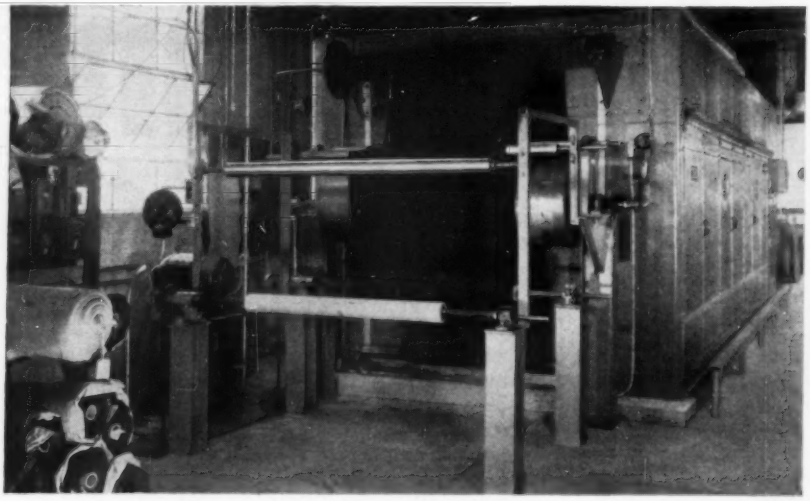

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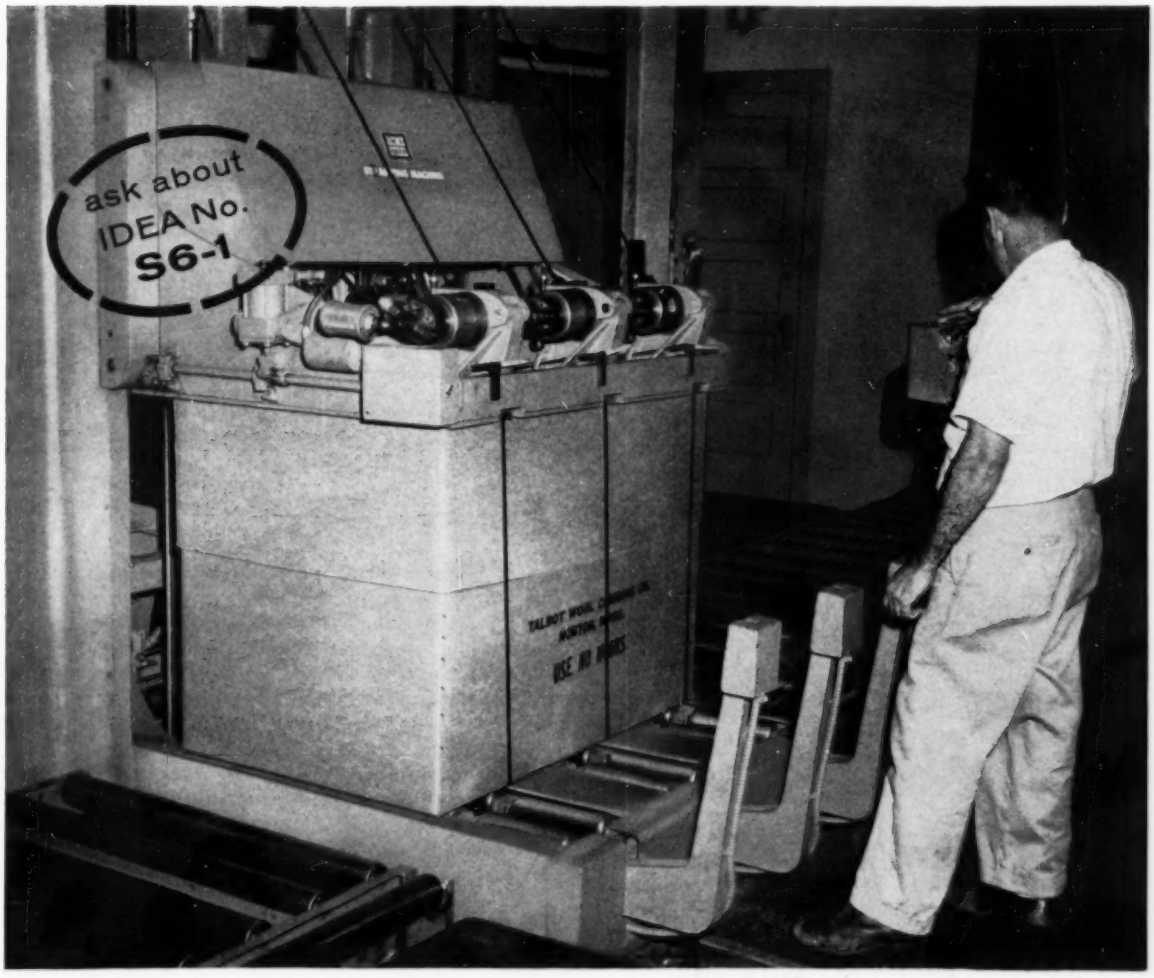

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The "Poor Mouth" May Backfire

In the last days of June, the Senate defeated by two votes an amendment to the foreign-aid bill that would impose import quotas on farm and textile products. A few days later, Rep. Martin and Sen. Saltonstall of Massachusetts announced that they would confer "soon" with Sherman Adams, Eisenhower's assistant, "to solve the problem of curbing textile imports."

At the time of this writing, the conference has not been held and no one can predict the outcome. One thing is certain: the Senate vote was so close that the Administration, and particularly the State Dept., knew that an important defeat was breathing down their necks. One key factor in killing the amendment was the argument to do nothing until the White House and the Tariff Commission have time to study the textile import problem.

No Need for Excesses

As readers of this page know, we have been concerned with the problem of Japanese imports for many months. We personally remember some of the effects of Japanese competition in the 1930s. Because of the nature of the textile industry and business, we know that it is poppycock to suppose that the textile industry can operate without market preservation of some kind.

Yet, we have been dismayed by some of the wild statements and fantastic claims of injury we've seen in newspapers in late weeks. One mill we know that was obsolete many years ago and had been losing money for several years shut down. The whole blame was laid to Japanese imports (which started in volume only about six months before), when the real reason was inadequate management and obsolescence. We could cite many other excesses and misrepresentations.

Propaganda May Backfire

Of course there has been a great deal of truth in the majority of claims of damage. It positively is a fallacy to try to judge damage by comparing total Japanese imports with the total U.S. market. When Japan floods the market with a few cloth constructions, there is extreme and widespread damage. Besides the loss to mills making those constructions, the markets of other mills suddenly become more competive when the damaged mills seek new markets.

We certainly have no argument against truth. It is only fantastic misrepresentations and yells of "Wolf!" and the damage they can do to the industry that we deplore. We are convinced that considerable damage has been done by these techniques.

We've had occasion recently to listen to men in other industries talk. The general tenor is that the textile industry "has gone to hell." Investment brokers advise their clients to keep their money as far away from textile investments as possible. Young men entering college are advised to avoid the textile industry as they would the plague. Workers and supervisors worry their heads off about the industry they're in and wish they were somewhere else.

These are some of the ill effects we've run into. They certainly do not improve the reputation of the industry as one to work in or invest in for the future.

There is no question that some calamity has occurred and more threatens. But indiscriminate howls of calamity and sheer misrepresentation can backfire and result in creeping damage for years to come.

O. M. Thomas

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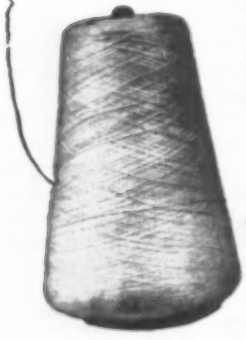
For more details on the most competent "team" in the processing of synthetics — the Turbo Stapler and the Turbo Fiber Setter — talk to a Turbo technician. You'll be delighted to know more about this modern way to better yarns at lower cost.



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THE SHORTAGE OF SCIENTISTS AND ENGINEERS:

A Threat to Economic Progress

THERE are two paramount reasons for concern over the serious shortage of scientists and engineers that now confronts the United States:

- The first reason, with which this editorial deals, is that continued expansion of our economy and further increases in our living standards are threatened unless we train more scientists and engineers and use them more effectively.
- The second reason for concern is that we run the risk of falling behind the Soviet Union in the technology so essential to national security. The consequences of losing this race to the Russians are not comforting. (The possibility that this might happen over the next few years was discussed in an earlier editorial in this series.)

The crucial contribution of scientists and engineers to the well-being of the American people has been to find ways of making better use of limited resources, to make equipment more productive, to develop new and better products that enrich our lives, to enable us to live longer and be healthier. They have made this contribution with greater success in the last 15 years than ever before, but it has required progressively more resources and more trained people.

During this 15-year period our annual production of goods and services, in dollars of constant purchasing power, has almost doubled. Since our total population has increased only 25 percent, this has meant a tremendous rise in the economic well-being of the American people as a whole. But in accomplishing this, the number of scientists and engineers has been more than doubled.

Tasks for Research

If the American economy is to continue to grow and if our living standards are to show further improvement, the work of scientists and engineers must be stepped up even more in the years ahead. Unless answers to several pressing problems are found through intensified research efforts, economic progress will become increasingly more difficult.

Productivity per hour of labor must be increased at a faster rate. Improved medical care has greatly increased the number of people who attain retirement age, and sharply higher birth rates since the war will mean larger numbers of children in school and college. Meantime, because of low birth rates during the depression, the number of people reaching working age is not rising nearly so fast. The result is that over the next 20 years our population will increase by about one-third, while the total manhours worked are not expected to increase more than 15 percent. So, simply to maintain the same living standards for a rising population — with no provision for additional improvements — ways must be found to enable each worker to produce for more dependents.

It is primarily to the scientists and engineers that we must look for help in making human labor more productive. This will require enormous increases in our power

resources. We will need to make more effective use of our existing fuel supplies — coal, oil and natural gas. And we will have to devise economically practical means of tapping other energy sources, particularly nuclear power and new rocket fuels.

Also, better ways must be found to use scarce and low-grade raw materials. Thanks to great strides in metallurgy and mining techniques, we are now utilizing sources of copper and iron ore that, for all practical purposes, were not available to us only ten years ago. Similar strides are needed in the mining and processing of bauxite if low-grade domestic ores are to help satisfy a fast-growing market for aluminum. And stubborn technical obstacles in the area of "high temperature" metals—such as nickel, cobalt, columbium, tantalum and titanium — are impeding progress in jet and turbine engines.

These are only a few of the challenging tasks that demand intensified research and engineering activity in the years immediately ahead if the United States is to continue to raise living standards. We need more houses, schools and highways for a rising population, more medical research to reduce further the ravages of illness, more research in chemistry and other sciences to sustain the flow of new and improved products that are so essential an ingredient of our economic progress.

Ceiling on Growth

American industry has indicated that it is ready to meet the challenge and undertake vastly expanded research programs. A recent survey conducted by the McGraw-Hill Department of Economics revealed that total research and development expenditures of American industry were almost $5 billion last year, 29% higher than in 1953. By 1959 business plans to be spending well over $6 billion on research and development. And the total could well prove to be much higher, based on the trend of recent years.

But industry's programs for research and development cannot be carried out unless enough qualified research workers and engineers are available. Ernest R. Breech, chairman of the Ford Motor Company, recently described the supply of engineers as the "ceiling on our future growth." He gave force to his point by announcing: "If 900 qualified engineers were to approach us next week looking for jobs, we would hire every one." The U. S. Bureau of Labor Statistics found in interviews with some 200 large companies at the end of 1954 — a recession year — that at least half were unable to hire enough research scientists and engineers to meet their needs. A third of the companies reported substantial shortages of technical personnel.

The shortage of technically trained people, furthermore, is becoming more acute. The number of engineers and scientists now being graduated is only about enough to cover replacement requirements, while the needs of industry, government and education are mounting every year. According to the best information available — as indicated in the first editorial in this series — these needs are now about twice as great as our current engineering graduating classes and annual production of scientists with Ph. D. degrees.

To perform the research needed to remove roadblocks to our economic progress — and at the same time hold our own in the technology essential to our security as a free nation — we must have an adequate supply of men and women with engineering and scientific training. Instead, we are faced with an acute shortage, now and for several years to come. Reasons for the shortage and proposals for working our way out of the shortage will be discussed in the remaining two editorials in this series.

This is one of a series of editorials prepared by the McGraw-Hill Department of Economics to help increase public knowledge and understanding of important nationwide developments of particular concern to the business and professional community served by our industrial and technical publications.

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Donald C. McGraw

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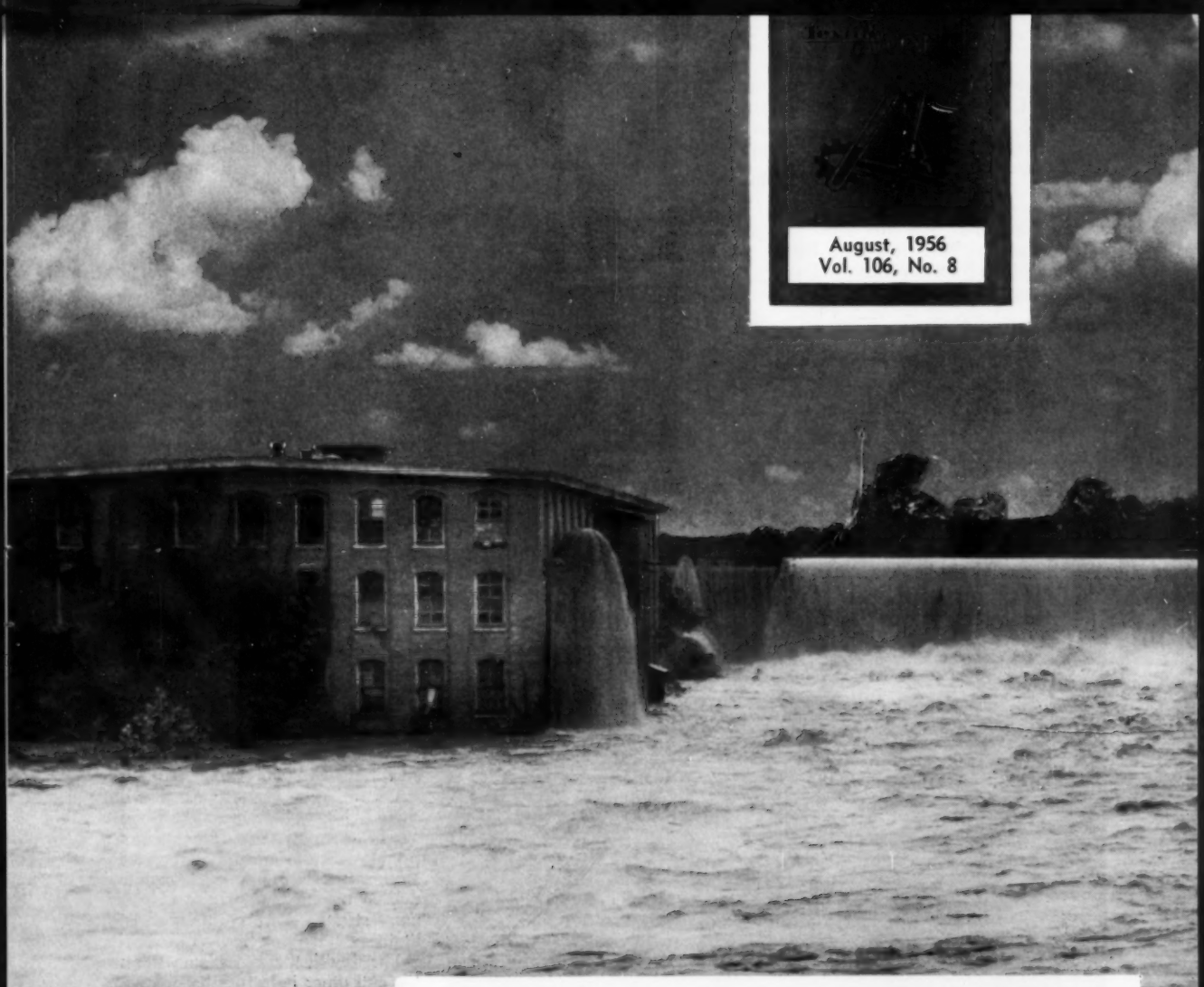


August, 1956
Vol. 106, No. 8

WATER POLLUTION—
What Mills Must Do About It

• Water threatens to become our No. 1 problem in natural resources. Underground water tables in many parts of the U. S. have dropped to alarming low levels.

• Why? Because underground water is being sucked up from deep wells for use on the surface, too much surface water is misused, and too much rain water runs off instead of soaking into the ground.

• What can be done about it? One thing is for industrial plants to stop making so much water unusable by dumping waste into streams.

• Most textile states now have laws to combat stream pollution. Here is a quick look at what 15 textile states require—and what mills are doing about it.

By **ROBERT W. PINAULT,** Assistant Editor, TEXTILE WORLD

IN RECENT YEARS many states have passed new laws on stream pollution by industrial wastes; others have tightened up old laws. Pressure to keep streams clean is now definitely on, where a few years back mill-waste treatment was more or less put aside as something to do at a later date.

But what may become a crisis has been creeping up on American industry, causing many users of water to take a second look at any means that will help insure an adequate supply in the years to come because, nationwide, water is becoming increasingly scarce.

Lowered water tables throughout the United States have alarmed both state and federal authorities because this condition itensifies the pollution problem and is definitely limiting industrial expansion in some areas. So stream pollution by industrial waste, as well as by city sewage, has become everyone's red wagon.

Pressure Is on

Three forces have been brought to bear on the problem. They are:

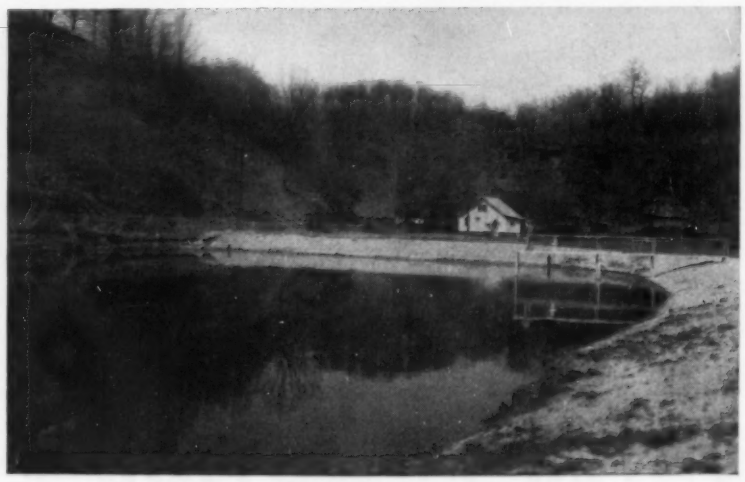
1. Legal measures
2. Concern on the part of industries that require increasing supplies of pure water
3. Public opinion

It would be difficult to say which, if any, of these forces is exerting the most pressure at this time, but one thing is certain: laws relating to stream-pollution abatement are tightening up. Wholesale dumping of industrial wastes into streams already overloaded will soon be a thing of the past.

Although the federal government recognizes its responsibility in the matter of stream pollution through the Water Control Act of 1948, the tendency in Washington is to let the states handle the problem at state levels. However Senate Bill 890, passed in 1955, grants $2-million yearly over a five-year period to states toward water-pollution control.

A more ambitious bill, H.R. 9540, calling for a $25-million grant-in-aid program for state and interstate pollution-control agencies has been cleared by the Public Works Committee. The bill also authorizes a $500-million maximum-grant program for planning and construction of water-treatment works.

What Textile Mills Are Doing About Pollution



SETTLING BASIN or lagoons similar to this one at Spencer Mfg. Co's. plant in Spencer, W. Va., are often adequate for fitting dyehouse wastes to direct discharge to a running stream. This lagoon will retain 10 to 12 days' dyehouse effluent.

The textile industry, like others, may have lagged a bit in working toward stream-pollution control; but today there is an active interest in the subject. The problem is being attacked by textile plants by one or more of the three following basic methods.

First the mill's volume is studied to see if it can be reduced in quantity or if the extent of contamination can be reduced by better usage of the water or by recycling chemical solutions. State authorities usually are glad to cooperate in any survey.

Then, when these angles have been explored, the next step is to provide settling basins of adequate capacity to produce an effluent of better quality. The settling basin generally is a man-made lagoon. Natural areas such as swamps can be utilized for this purpose if they are suitably located. Normally, artificial lagoons predominate, and means for periodic removal of sludge have to be provided for them.

Because in many cases textile-plant wastes carry considerable amounts of dissolved chemicals that won't settle, the final stage, or chemical treatment, must be considered.

Expensive Treatment May Be Necessary

It is at this point that heavy expense for effluent purification begins. In many cases, solids must be coagulated chemically and lagoons provided for settlement. Chemical treatment to reduce pH may be necessary. Fitting textile-mill waste to a municipal sewage-treatment plant is costing one mill $50,000 annually for chemicals alone.

On the other hand, plants that discharge highly alkaline waste into nearby streams are running into trouble with the stream-pollution laws. Wastes that are highly colored and rich in organic matter also contaminate streams beyond today's legal limits.

Faced with these problems, the textile and other industries have gone to work through many agencies to improve stream conditions at lower costs.

Many Industries Involved

Some idea of the magnitude of the effort being made by industry to reduce stream pollution can be gotten from a report made by C. Fred Gurnham of the Dept. of Chemical Engineering, Michigan State College. Speaking at the Fourth Southern Municipal and Industrial Waste Conference in April, 1955, Mr. Gurnham said in part:

". . . The chemical industry, according to reports of the Manufacturing Chemists' Association, is spending 40-million dollars annually for pollution control. The pulp and paper industry in the last 10 years has spent in excess of 70-million dollars, not including installations that provide even partial recovery of materials. Other major industries have spent comparable amounts, and the over-all total is very large.

"The major portion of these costs

is for construction and operation of waste-treatment plants. Many large plants have invested several hundred thousand dollars for such installations. Large sums also go for research on both laboratory and pilot-plant scales because there is still a great deal to be learned about methods of treatment.

"Pollution abatement, by waste treatment or other means, is a task and an expense for each individual plant. Only rarely can a group of plants join forces for a joint disposal operation, although frequently disposal and treatment of industrial wastes can be tied in with municipal sewage systems."

What Mill Research Is Producing

The production of a satisfactory effluent from sewage systems has been the object of a vast research program and has been well established for many years. The American Public Health Association has set up procedures and test methods that are the standards by which municipal systems operate.

But the picture in textile-plant waste disposal is radically different. Causticity, acidity, and color are added to putrefactive elements; and systems set up to operate on sewage fail. However, considerable progress in solving this problem has been made.

The Cone Mills Method

In a report to AATCC in 1954, R. Hobart Souther, research director of Cone Corp., outlined a method developed at the Cone laboratories by which highly alkaline wastes could be mixed with city sewage, put through a trickle filter and an activated sludge basin, and, without chemical cost, produce an acceptable effluent. Gradual acclimatization of aerobic bacteria on the filter to high pH was the secret. The method operates on a mixture of 40% mill waste and 60% sewage at a pH of 10.5 to 11.5.

A further report to the North Carolina Sewage and Industrial Waste Association presented by Mr. Souther in Nov., 1955, showed that much-improved effluents were produced from a two-stage trickle filter followed by an activated-sludge basin treatment.

These experiments started others in the textile industry. At least one other textile plant is converting these laboratory findings to full-scale plant practice in disposing of mill waste.

Carbon-Dioxide Method

Another approach to reducing alkalinity without a high chemical cost is through the use of the carbon dioxide present in all boiler stacks. In this method, stack gases are bled off, scrubbed to remove fly ash, and bubbled through a concrete basin that receives the mill's waste water. A retention period of 15 mins. is provided for. Conversion of the highly active hydroxides and carbonates to the bicarbonates cut down effluent pH very considerably.

TRICKLE FILTERS in the Cone Mills laboratory start the biochemical reactions that, followed by settling tanks and an activated-sludge basin, produce a satisfactory effluent from a 40-60 mill waste-sewage mixture without added chemicals.

From the carbonation chamber the wastes go to a round setting basin of about 1 to 2 hrs. retention capacity. A revolving sludge collector picks up 85 to 90% of the wet sludge, which flows by gravity or is pumped to sludge-drying beds. The beds can be made of broken tile, rock, or cinders. The dried sludge may have some market value as a soil conditioner.

After leaving the settling chamber the waste may flow to a lagoon or to a channel that connects with a creek. For emergencies, chlorine may be bubbled into the delivery system to pick up the dissolved-oxygen supply.

Fairforest Installs System

Fairforest Finishing Div. of Reeves Bros. will very shortly be fully equipped to treat mill wastes by the stack-gas process. It also has in operation a caustic-recovery system that reconcentrates mercerizer wash water for reuse instead of letting it flow to the drains.

Because high alkalinity is one of the common conditions in dyehouse wastes, there is a return to the system of caustic recovery where there are mercerizing operations. Caustic recuperators were popular 50 years ago but were generally let wear out and were not replaced. New caustic was cheap, and the stream-pollution angle was given little attention.

Caustic Recovery Cuts Costs

Caustic-recovery-and-reconcentration plants may cost as much as $250,000 to install, but they help reduce costs. One bleachery manager said: "We could have spent $250,000 to much greater advantage. This caustic-recovery setup won't pay for itself in 20 years; but it does produce something, and that is better than a continual out-of-pocket expense for chemicals to neutralize our wastes."

What Is the Law?

A survey of the states in which the textile industry is concentrated shows that in every instance laws are in effect that prohibit excessive stream pollution from industrial wastes. Some of these laws go back to 1899. Many of them are so recent as to be operative only by the end of 1956. A few are elementary and appear to offer considerable leeway to industries already established, but for the most part these lenient laws affect areas with a relatively minor pollution problem.

State stream-pollution laws vary considerably. Broadly, two approaches are used: (1) stream classification into four or more classes, or (2) a blanket law that covers all waters in the state. In most cases, drinkable water supplies are completely restricted and may not be used for sewage or mill-waste disposal. Also, the location and concentration of industry in a state determine the principal provisions.

The general tone of all the laws is one of solicited cooperation rather than a do-it-or-else fiat. That waste-treatment plants take time to build and cost a lot are given due consideration.

But the law is still the law and must be complied with in a reasonable length of time. In all cases, a state authority on stream pollution, backed by the necessary legislation, has the power to enforce the law. Plenty of leeway is allowed industries that give evidence of good faith in trying to overcome pollution problems.

To the credit of the textile industry, it can be said that many plants have established satisfactory waste-disposal systems at considerable expense and of their own volition.

To assure the possibilities of future growth of the textile and other industries in the country, it must also be said that widespread stream-pollution abatement cannot come too soon. Available water supplies are already being taxed to the limit in many areas.

Here's How the Laws Are Framed

The type of law and the principal provisions of the laws in 15 states are:

Connecticut

The State Water Commission under a 1953 law, Chap. 195 Amended, regulates all waters, with specific programs applying to the Hockanum and Quinnipiac Valleys for 1954 and 1955. Any existing pollution is subject to review; new pollution prohibited without permit. Penalties to $200 for violations. State will make engineering surveys at request.

Delaware

The state is divided into drainage-basin areas by Delaware Water Control Commission under 1949 law and Gen. Orders 1 and 2, 1951. Gen. Order 1 requires submission of plans for new waste-disposal systems. Gen. Order 2 requires submission of reports concerning waste-disposal systems, additions thereto, or any changes in volume of waste.

Maine

Waters are classified under revised statutes of 1954, Chap. 79 as amended. Class A may not be polluted. Class B may receive limited amounts treated waste. Class C is of slightly lower quality. Class D is for waste transport. New sources of pollution must be licensed by Water Improvement Comm.; existing sources must not lower the classification set by Comm. Fines to $200 per day for violation.

Maryland

Broad law, passed in 1947, Chap. 697 amended 1949, Chap. 239; 1951, Chap. 346, Reg. IV amended 1953, affects inland and tidal waters. State Water Pollution Control Comm. is independent body. Provisions stress voluntary cooperation. The 1953 amendment provides new standards. Final revisions definite in stating type of waste permitted to flow into harbors or streams and specify conditions of receiving waters after effluent is added.

Massachusetts

No inland or tidal waters may be polluted by sewage or industrial waste, except as allowed by Dept. of Public Health under general laws 1945, Chap. 615 and amendments. Dept. to determine if all reasonable means have been employed to reduce contamination. Offenders to be notified by Dept. of Health. Conviction for continued pollution brings $500 fine. Dept. of Health to be arbiter of means of waste treatment used to abate pollution.

New Hampshire

Waters are classified under Jan. 1947 law with amendments in 1949-1950. Class A is for domestic water supply; no sewage permitted. Class B-1 may accept limited amounts of treated wastes. Class B-2 must be similar, slightly less restricted. Class C must retain industrial-use quality. Class D waters are primarily for sewage transport. State Water Pollution Comm. classifies waters. Two to five years given offenders to abate existing pollution exceeding classification of waters affected. Various legal provisions for extensions where necessary. New plants, municipalities, must apply for permission to use streams for waste disposal and are subject to Commission's decision. Legalities are liberal.

New Jersey

Laws passed in 1899 and amended are basically divided to provide for potable water, potable water in industrial areas, and general laws respecting sewage disposal. Potable water supplies (60% of state's watershed) strictly prohibited to pollution. Law very specific. Factories in potable-water areas must have permits to discharge waste. Penalties to $500 for violations.

New York

Waters are classified under Public Health Law of 1954 and may not be lowered in classification by waste matter. Detailed description of allowable pollution in all classes. Coastal waters classified separately. Existing systems may continue if water classification is not lowered. New outlets for waste must be approved by State Water-Pollution Control Board. Penalties to $500 plus $100 per day of violation.

Pennsylvania

Waters are classified to receive wastes treated by primary, intermediate, or high methods of purification under law passed in 1937 and amended by Act 177 P.L. 435, May 1945. Sanitary water board establishes standards, works out means and methods for various industries. Board may prohibit continuance of existing waste-disposal method if public interest is affected. All plants must file reports on kind and amount of waste. Waters not now polluted may not be used for direct discharge of waste. New plants must treat waste before discharge to any stream. Fines to $500 and $10 per day for violations. Continuing violations result in jail sentences to one year.

North Carolina

Waters are classified by State Stream Sanitation Committee under general statutes of 1947 Chap. 143 Act. 21, Rev. 1951, 1955. Class A-1, no pollution permitted. Class A-2, only treated wastes in limited amounts. Class B, slightly lower quality. Class C, limited amount raw waste permissible. Classes D and E for

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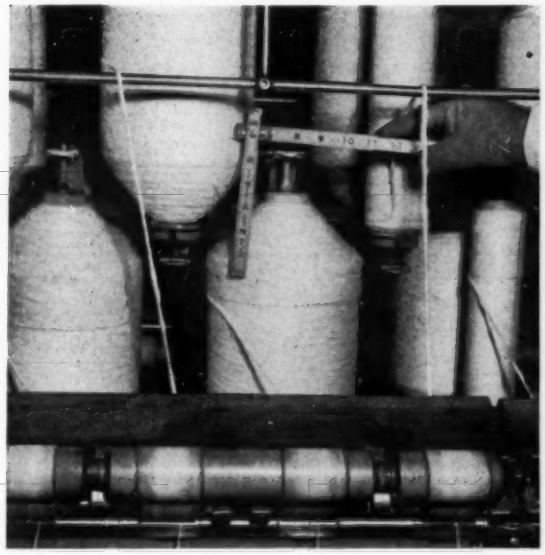
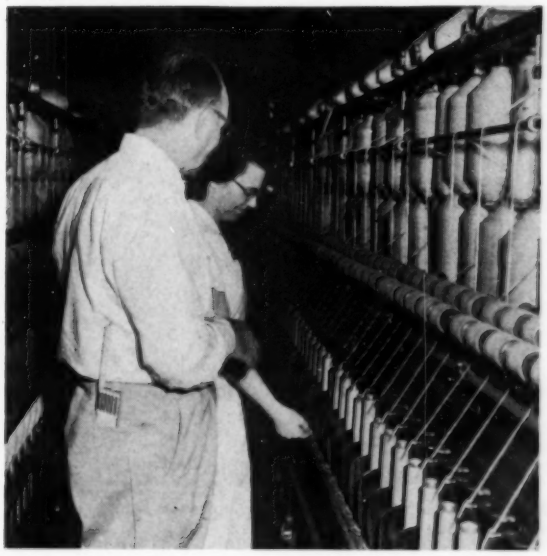


VERTICAL CREEL SPACE was increased 5 ins. by lowering the top bobbins between the tapers of the lower bobbins.



TRAVERSE was extended and ball-bearing spindles installed so that 11- and 12-in. paper tubes can be used.

Columbia Mills Increases SPINNING-FRAME Capacity

Columbia Mills, Columbia, S. C., modified its spinning frames to handle 12x7 roving packages and 11- and 12-in. paper tubes. Highlights—

- **Vertical creel space increased 5 ins.**
- **Creel top lowered 2 ins.**
- **Traverse increased 1 and 2 ins.**

By WILLIAM G. ASHMORE, Associate Editor, TEXTILE WORLD

COLUMBIA MILLS, Columbia, S. C., recently modified its spinning frames to handle 12x7 roving packages. The changes, which included rebuilding the creels and increasing the traverse, immediately increased production and improved quality of the 2.5s to 15s yarn spun for weaving into duck.

At the time of the changes, the spinning room was equipped with 120 Whitin 216-spindle 4-in.- and 5-in.-gauge frames. Ring sizes were 2¾, 3, and 3¼ ins. in diameter; all traverses were 9 ins.

Creels were bored out and the brackets extended to permit the bottom taper of the top roving bobbins to fit more closely between the shoulders of the bottom row of bobbins. This arrangement resulted in a gain of 5 ins. of vertical creeling space and permitted the top of the creel to be lowered 2 ins.

In order to take fullest advantage of the large roving packages, the 5-in.-gauge frames were converted from 9- to 11-in. traverse and spindles were adjusted to handle 12-in. paper tubes. The 4-in.-gauge frames were changed over from 9- to 10-in. traverse so that 11-in. bobbins can be used. Ball-bearing spindles were installed on 98 frames.

Long-Draft System Used

The frames are equipped with the Casablancas long-draft system. For 7s yarn, spun from 0.60-hk. roving, draft is 11.6, twist multiplier 4.5, front-roll speed 189 rpm., and spindle speed 6,900 rpm.

On coarse numbers, such as Columbia spins, cleaning is always something of a problem. Formerly, doffers were assigned to doff and clean 20 frames. About two years ago, the mill set up a new cleaning program that relieved the doffers of all duties except doffing. Overhead cleaners were added, the use of compressed air for cleaning was discontinued, and a new cleaning schedule for spinners was established.

The basic cleaning schedule now used is: Pick half the rolls each shift, wipe back guides once a shift, run out guides once a day, brush flat clearers once a shift, clean revolving clearers once a week, and brush rails once a shift.

Much manual labor is saved by using an American MonoRail bobbin-hauling system between the spinning room and the winding department. Two trucks, which hold five boxes

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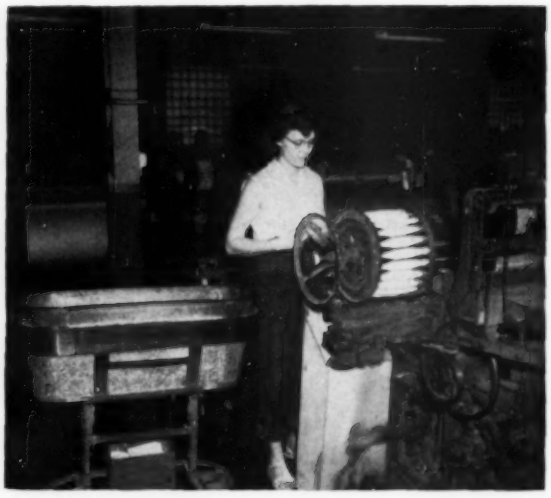
ROOF of this new weave room is of precast concrete slabs, supported by steel beams and columns.



BATTERYHANDS use Paddock trucks. Notice the brick and glass-block wall construction in the background.

Micolas's New WEAVE ROOM

A new room added to Micolas Cotton Mill, Opp, Ala., features newest methods of construction and operation. In addition, the mill—

- Keeps individual records of each loom
- Has quality and cost follow-up system
- Makes efficient use of the loomfixer's time

By **WILMER C. WESTBROOK,** Assistant Editor, TEXTILE WORLD

NEWEST ADDITION to Micolas Cotton Mill, Opp, Ala., is a modern one-story room housing X-2 and X model Draper looms. The walls of this new annex are of brick and glass-block construction, and the roof is made of precast concrete slabs. Supporting beams and columns for the roof are steel.

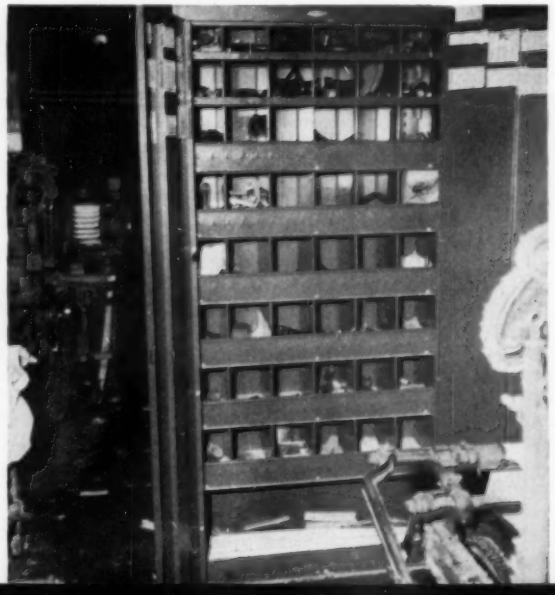
Earlier fears of water dripping onto the looms from the steel and concrete have proved to be unfounded. No condensation troubles have developed. The concrete ceiling is easier to keep clean because lint does not adhere to this surface as closely as it does to wood. Blowing down with compressed air every 24 hrs. has proved sufficient to keep the ceiling and supporting beams clean.

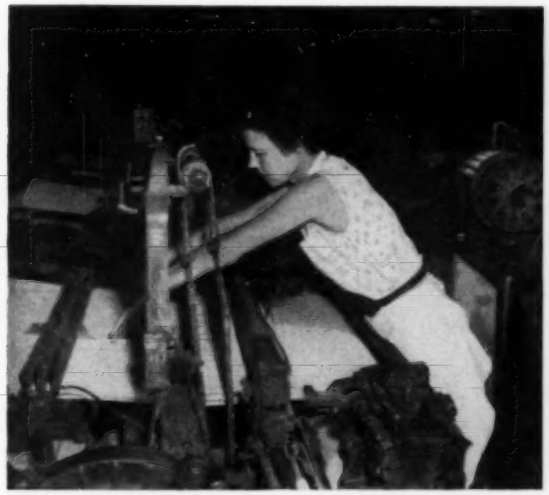
Air-Changing System Used

There is a dry-duct air-changing system in this new room. The humidity water and air pipes are located inside the air ducts. A temperature of 84° F. and a relative humidity of 86% are standard. The weave room floor is maintained by the Finnell system of cleaning.

The fluorescent instant-starting lights in this mill are not turned off during week-end shutdowns. Some light

CUPBOARDS like this are placed at each loomfixer's workbench for storage of small repair items.





FABRICS WOVEN are Class A sheetings and osnaburgs. This weaver is repairing a broken warp end.

LOOMS are Draper 40-in. and 48-in. E and X models. Loomfixers have supplies delivered to job.

is needed at all times, and the longer life of lamps largely offsets the cost of electricity used by the extra lights. The lights are inspected every Monday morning by the shop maintenance crew, and all weak or burned-out lamps are replaced at this time.

Looms in the new room at Micolas are Draper 40-in. and 48-in. X-2 and X models. The looms have 26-in. warp-yarn beams and are all motor driven. Some of the looms weaving heavy fabrics have boss roll tops, and the others have Dwight spring tops. All the looms have midget filling feelers and electric warp stop motions.

Fabrics woven are Class A sheetings, 36-in. and 40-in. width, 2.85 yds. per lb., and 40-in. osnaburgs of 2.11 and 3.65 weight. Warp yarns are 10s to 15.25s and filling yarns are 5.75s to 14.75s. Average running time of a warp is eight days. Warps are tied at the loom with a Barber-Colman 56-in. portable tying-in machine.

There Are Two Mills

General weaving practices in the new weave room at Micolas are the same as those in the other weave rooms in this mill and at Opp Cotton Mill. Micolas and Opp Cotton Mills are different establishments but are under the same management. The Micolas Mill has 761 looms and the Opp Mill has 685—a total of 1,446 looms in the two mills. In addition to sheetings and osnaburgs, the mills also produce drills, twills, and sateens.

A very thorough system of records and follow-up is maintained in the mills for all phases of production. A card is kept in the personnel office for the work record of each employee. These records provide useful background information for rehiring, promoting, or disciplinary action. An individual card is kept in the overseer's office for each loom in the mill. Every yard of off-quality cloth is recorded on this card.

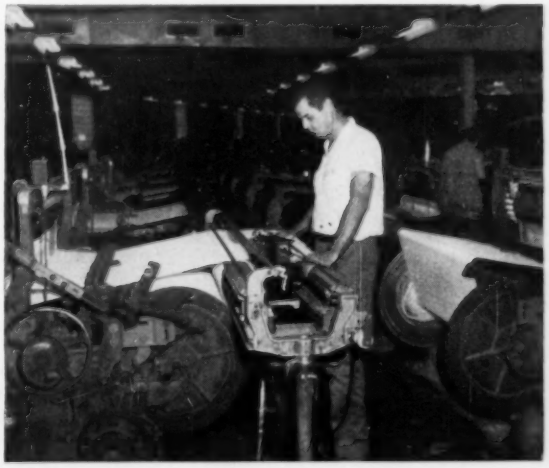
When the same type of defect appears in more than one roll of cloth from a loom, the loom is checked personally by the overseer and a report is made to the assistant superintendent for possible follow-up. Cloth containing weaving defects is also sent to the weave room to be shown to weavers and loomfixers. With this method the repeaters, or looms continually weaving seconds, are located and fixed.

Supply Cupboards Used

A standard expected service life has been worked out for loom parts such as shuttles, pickers, picker sticks, and checkstraps. A record of parts replacement is kept for each loom, and those not giving standard performance are double-checked.

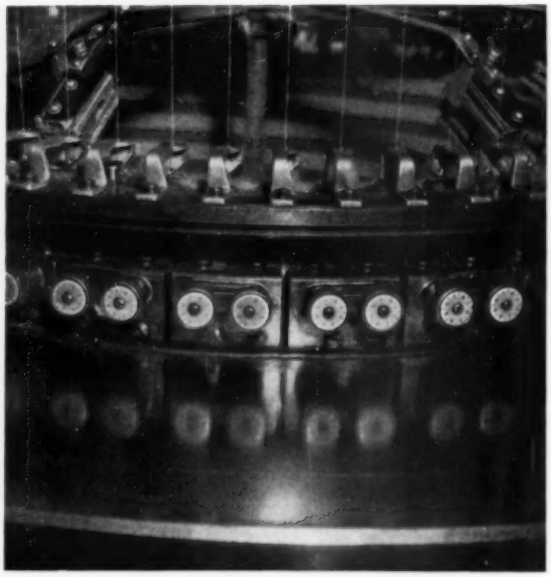
For more efficient use of the loomfixers' time, supply cupboards are kept in the weave room for storage of the most often-used small repair parts. An employee makes regular rounds of these cupboards, replenishing the supply of parts. He also brings other parts from the supply room on order.

Records are kept of production, cost, and waste items and are posted in the mill. Records that can be reduced to graphic form are recorded on charts; and all concerned can see how they stand on quality, quantity, cost, waste, and absenteeism.



TYING IN is done with a 56-in. portable machine. Each warp will run about eight days.

CALIPER is used to set stitches in jersey cloth. If marks on the fabric do not check, the machine is readjusted.



MICROMETER stitch adjustments are all set to the same level and are constantly checked. Electric stop motions guard against faults.

Now—It's High-Bulk ACRILAN JERSEY *at Allen*

To complement wool-jersey production, this New York knitting mill has introduced high-bulk Acrilan jersey. To keep fabric quality at a high level—

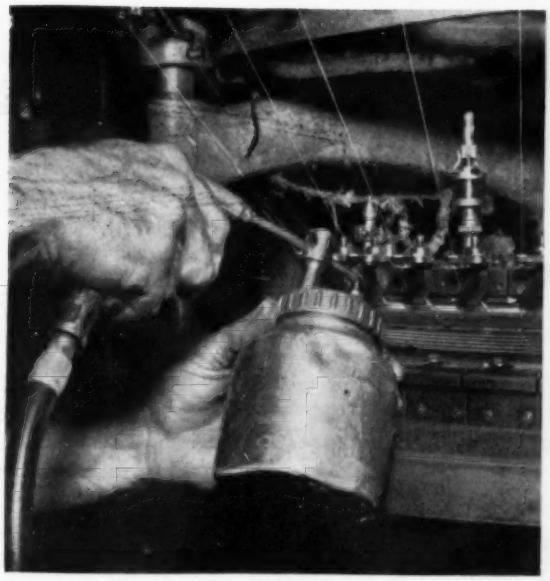
- Yield is checked daily
- Needles are all replaced periodically
- Stitches are set with calipers

By JAMES H. BLORE, Associate Editor, TEXTILE WORLD

ALLEN KNITTING MILLS, INC., New York, N. Y., which pioneered in Redmanized washable wool-jersey fabrics, was the first mill to knit high-bulk-Acrilan jersey. This fabric is being used for men's shirts; women's blouses, suits, and dresses; and all types of children's wear.

Wool jersey is still being produced, and the Acrilan is knitted on machines alongside those knitting wool. Special Supreme machines are used to knit both wool and Acrilan. These machines are 18 to 20 cut with 64 feeds, and the cylinders are 20-ins.-dia. and higher.

The Acrilan yarn sizes range from 26s to 40s. The yarn is run directly from the 3-lb. spinner's cones. The yarn is treated with antistatic agent, which also aids greatly in reducing troublesome lint. Double-tied cones are used to reduce machine down-time.



OILING is done sparingly with an atomizer fixed to the air hose once about every three or four rolls of fabric.

CONES of Acrilan high-bulk yarn are double tied so the machine does not have to be frequently stopped for yarn changes.

To keep quality and yield at a constant level, each roll of fabric is weighed immediately it is removed from the machine at uniform sizes. A weight check is kept on each roll of fabric and entered against each individual machine record.

Since each roll of fabric is made to the same number of revolutions of the machine, a deviation from the standard weight can be easily recognized. If the roll of cloth is too heavy or too light, the machine is immediately adjusted.

In addition to this quality-control check, one or more rolls from each machine is measured and examined on an inspecting machine each day. The gray yield per square yard is calculated, and this figure is sent to the dyehouse.

All Faults Are Recorded

Each fault is recorded by the knitter on the knitting ticket, and these faults are entered in the machine record along with the weight. The record book is checked each day by the knitting-room superintendent; and if faults are too prevalent, he takes immediate action to rectify the faults.

If the faults are traced to excessive needle breakage, a complete set of new needles and sinkers will be put in the machine. The records show that about 2,000 rolls of cloth are made for each complete needle change.

Spare cylinders loaded with new needles are kept in the store room. When needles have to be changed, they can be replaced along with new sinkers, which are contained in spare rings, in 30 mins.

The machine records are kept on file; and if any fault is found with the cloth at any later stage, the knitter and the knitting machine can be quickly traced.

Knitters Inspect Fabric

Each knitter looks after two machines and keeps a close inspection of the fabric at all times. Electric hole detectors on each machine stop the machine in case of faults that get by the knitter. There are 12 Crawford stop motion detectors on the 20-in. machines and more on the wider machines.

A 120-w. lamp shining on the inside of the fabric also aids inspection.

Calipers are used to aid in setting up the machines. The calipers are set to a scale on the wall according to the quality of fabric that is required.

The yarn on the machine is marked above the yarn cone with the take-up stopped in a marked position. The machine is run for three revolutions, and another mark is made on the yarn at the same feed with the cylinder in the original position.

The fabric is run down, and the two marks that are now in the fabric are checked with the calipers. If the marks do not coincide with the calipers, the machine is readjusted. The fabric width is always checked at the spreader when a machine has been adjusted.

The needle cylinder is moved to its central position to allow for adjustments in both directions. The micrometer adjustments on the stitch cams are kept at the same level at all times and are checked each day by the superintendent.

Little Tension Is Used

As little tension as possible is placed on the yarn during knitting. A small disk controls yarns that have a tendency to jump and cause drop stitches. Just enough tension is placed on the fabric to clear the stitches over the needles.

To keep the fabric clean, the needles and sinkers are lubricated once every three or four rolls. A soluble oil is sprayed on the needles and sinkers in a fine spray directed from an atomizer fixed to the air-pressure line.

A water filter fitted to the air compressor outlet keeps rust off the machines. The air hose is used to blow off lint only when necessary. This practice keeps excessive lint from blowing into the fabric.

Rib trims are made on Supreme machines in the same yarn lot the jersey fabrics are made from. These rib trims go through with the jersey fabrics, and they are dyed in the same dyebath. The fabric receives its bulk during the dyeing process.

These practices at Allen Knitting Mills make certain that each roll of Acrilan high-bulk jersey cloth is of a constant weight, that shrinkage is held to a minimum, and that faults are few and far between.

How Modern Are Your DRAWING Processes?

- Do you have one of the most modern methods of drafting on your drawing frames?
- What are the advantages and disadvantages of the improved metallic rolls?
- What's the best method of weighing rolls?
- What about converting to large cans?
- Here is a well-informed discussion of the latest drawing-frame elements that might help you save money by getting the best sliver quality and machine efficiency at the lowest cost.

By RICHARD D. CROWSLEY

Why Use Drawing?

The drawing process is designed fundamentally to prepare the fibers for higher drafts at the roving frame. Major objectives are to place the fibers in a partially parallel position and to reduce the variation of sliver.

Variation is reduced by doubling a number of ends of card sliver and drafting the mass to a weight approximately that of a single end taken from the card. Two different types of variation are measured. One is yard-per-yard variation; the other is inch-per-inch variation. Drawing tends to decrease the yard-per-yard variation but increases the inch-per-inch irregularities.

An interesting experiment was conducted several years ago to determine the effect of doubling sliver over and over again at the drawing frame. A 55-grain card sliver made from 1☆-in. neppy cotton was processed on a four-roll drawing frame, six ends up, with a draft of six. Samples were taken at every fifth drawing operation. Testing started at the third passage through the drawing frame and continued through the final operation that consisted of 33 passages. The samples were then spun into 50s yarn with a twist multiplier of 5.00.

Sliver Becomes Weak

After the first few drawings, the sliver began to acquire a lustrous, shiny appearance similar to combed yarn. As the drawings increased, the sliver became increasingly difficult to handle because the fibers were reaching true parallelization and could be pulled apart very easily. As the number of drawings approached 30, further processing became almost impossible because of the weakness of the strand. The percentage of long fibers per section of sliver increased significantly as many short fibers dropped out during the multiple drafting.

The test indicated that a definite degree of uniformity is reached early in the drawing process and remains unchanged thereafter as long as reasonable care is taken in handling the sliver. Strength and neps increased.

In the light of this test, at least one process of drawing appears to be required for the spinning of all but the coarsest numbers on a commercially acceptable quality basis.

What can be done to improve the quality, machine efficiency, and the cost of the drawing operation? If the mill cannot buy new frames, old equipment can be modernized by careful selection of conversion units.

Drafting Elements

The type of drafting element on the old frame should be considered first. Drafting elements are now available in the form of four-roll, five-roll, three-over-four, and four-over-five units.

Four-roll drafting, the oldest type of element, consists of four top rolls located directly over four lines of bottom rolls to provide a definite nip at each set of rolls.

Five-roll drafting consists of five sets of top and bottom rolls. The added set of rolls provides another drafting zone so that a lap with 16

ends of sliver can be fed and drawn with a draft of approximately 16. The greater mass of sliver requires the additional drafting zone to permit the intermediate drafts within the machine to remain low enough to retain control and yet produce the necessary total draft.

Three-over-four drafting, a later development, has four lines of bottom steel rolls and three top rolls. A top roll is located over the front bottom roll; another top roll is over the back bottom roll. The heart of the drafting element is the unit consisting of the middle top roll and the second and third bottom rolls. The middle top roll is in firm contact with the third bottom roll but is held a predetermined distance away from the second bottom roll by collars.

This type of drafting element was the first practical application of slip-drafting to a drawing frame. It is successful because it permits fiber control but avoids the difficulties associated with the usual means of obtaining slip-drafts. The main obstacle to utilizing previous types of slip-drafting was that no suitable apron of a size and length necessary for the full gauge of a drawing drafting element could be devised. The three-over-four element was designed to provide slip-drafting without the use of an apron.

Factors Affecting Draft

The system gives two drafting zones similar to the drafting elements for roving and spinning, based on the Shaw principle of draft control. The break-draft zone extends from the nip of the top and back rolls to the nip of the third bottom roll and the middle top roll. The break draft usually ranges from 1.5 to 3.0, depending upon such factors as the total draft employed, the grist of the fiber, and the characteristics of the fiber being processed.

The front draft extends forward through a zone ranging from the nip of the third bottom roll and the top middle roll, through the gap existing between the top middle roll and the second bottom roll, and through a selvage guide to the nip of the front line of rolls. A high degree of fiber control is obtained to a great extent through the medium of the second bottom roll running in a position close to the middle top roll.

Fibers Are Compressed

The distance between the rolls is not close enough to hinder the travel of the fibers or cause fiber disarray; however, the rolls compress the fibers slightly. The compression creates enough interfiber friction to keep the individual fibers in their proper place in the strand during drafting.

Lately, the four-over-five drafting element has been introduced. Basically, this element is a further development of the three-over-four system to which another line of top and bottom rolls has been added. The front top and bottom lines are the same, and the Shaw unit of the second and third bottom rolls and the second top roll is substantially the same. This unit is followed by two sets of top and bottom rolls, rather than one set as in three-over-four drafting.

The functional difference between the three-over-four and the four-over-five systems is that there are three drafting zones instead of two. The break-draft zone extends from the nip of the back rolls to the pair of rolls behind the Shaw unit. Here the draft is low, between 1.25 and 1.50, since the sliver being fed does not have any restraining twist to interfere with the progressive movement of the individual fibers.

The intermediate draft zone extends from the second pair of back rolls to the nip created by the large middle top roll and back bottom roll of the Shaw unit. The draft at this stage usually ranges from 1.75 to 2.00. The final draft zone is also from the nip of the middle top roll and back bottom roll of the Shaw unit, through the gap of the middle top roll and the second bottom roll, and forward to the nip of the front roll. This is the zone of greatest draft, up to 7.5, and the fibers are under the control of the Shaw unit itself.

Another type of four-over-five drafting has been introduced. This element, available only on new frames, differs from the four-over-five previously described in that the second top roll is in contact with both the front bottom roll and the second bottom roll. The greatest pressure on the top roll is at the point of contact with the second bottom roll; the nip on the front bottom roll is reduced.

The third top roll also is in contact with the small third bottom roll and the larger fourth bottom roll. Here again, there is a firm nip between the middle roll and the fourth bottom roll and a reduced contact between the top roll and the third bottom roll. It is believed that the same type of slip-drafting takes place as with the four-over-five element.

Savings Are Indirect

The objective in designing new drafting elements for drawing has been to improve quality, not to increase the amount or degree of drafting. In roving and spinning, an increase in draft can result in substantial operational savings. In drawing, it usually is conceded that savings through improved drafting are gained indirectly through greater efficiency and higher quality rather than from machine savings caused by higher drafts. If sliver variation is reduced, the resultant roving and spun yarn will be stronger and have fewer weak spots; there will be fewer ends down to cause machine stoppages.

Metallic Rolls

Another drafting element that must be seriously considered as a change-over for old frames is a modernized version of metallic rolls. Metallic drafting rolls were used for many years, but they were gradually replaced because mechanical wear destroyed their effectiveness.

Metallic rolls differ from the more commonly used fluted rolls in that they are coarsely fluted and mounted so that the flutes operate in partial mesh. Top and bottom lines of metallic fluted rolls are arranged to produce the effect of two gears running in mesh. This arrangement varies from the usual element where the bottom rolls are fluted with a fine flute merely to obtain a better fiber grip and the top rolls are covered with a cushion.

Rolls Crimp Fiber

The advantage of metallic rolls with the flutes partially in mesh is that the sliver is compressed and crimped. The sliver is carried through the rolls as though it were being fed between two gears held slightly apart. The crimping and compressing are desirable in handling sliver because of the sliver's mass and the thickness of the fiber grist.

Metallic rolls must be held apart or the top-roll flutes will drop until they touch the bottom rolls. If this action occurs, the rolls mesh and cut the sliver, which causes an immediate and serious drop in quality and strength.

The main objection to metallic rolls formerly was the wearing of the collars that separated the two sets of rolls. On older-model frames, collars were integral parts of the rolls. Located on the outside of the fluted

bosses, the collars rotated against each other and slowly became undersize from wear. This wear allowed the flutes to move gradually toward contact and cut the sliver.

On modern frames, the rolls are mounted on ball bearings with the outer race of the bearings acting as collars. Since the outer races do not rotate, there is no wear to cause the flutes to touch bottom and damage the sliver. Also, the use of antifriction bearings permits much higher speeds, smoother movement, and increased production.

Spring Weighting

Another change in the drawing frame that is of major importance, either from the viewpoint of improving quality or convenience of operation, is the change from dead weighting to spring weighting. Spring weighting, now coming into its own, was stymied for many years because of a lack of knowledge regarding correct specifications and a lack of trust in springs.

The primary advantage of modern spring weighting is the flexibility gained in adjusting the pressure on the top drafting rolls. Spring-pressure units are simply interchanged when conditions in the mill indicate that a change from one sliver weight to another will improve efficiency of drafting. Adjustment is not practical with dead weighting, which requires moving and storing large masses of heavy cast-iron weights.

Weighting Is Accurate

Spring weighting is accurate because the units are individually adjusted to a built-in gauge that assures the exact degree of pressure. Another advantage is that the frame can be more easily cleaned and maintained. The underside of the chassis is clear of all heavy weights and has only a few spring units with their weight-release motions. Spring weighting is basically better than dead weighting because of its greater sensitivity to the sliver passing through the drafting rolls.

Springs react immediately in response to variations in the mass of sliver being drafted. When the mass decreases because of a thin spot, the spring pressure is momentarily reduced. Inversely, when a thick place in the strand goes under the rolls, the top roll is forced upward and this action causes the spring-weighting unit to exert a greater pressure on the sliver.

The effect is automatic in accordance with variations of the sliver itself. Dead weights do not change, regardless of the mass of sliver being drafted at a specific moment.

Sliver Coilers

An important factor to consider in modernizing old drawing is the use of large coilers. The ordinary coiler for 12-in. cans is being supplanted rapidly by coilers suitable for either 14- or 15-in. cans. The larger cans are credited with significant savings in operating costs in the form of increased machine efficiency and reduced waste.

If possible, the cards also should be converted to the same-size cans to improve efficiency, increase production, and reduce waste. The larger creel supply back of the drawing is of direct benefit in maximizing the productive capacity of the process.

The larger cans are intended fundamentally to lengthen the creeling cycle of the process being fed and the doffing cycle of the machine involved. Where card cans are feeding drawing, the increased capacity of the larger can lengthens the creeling cycle enough to permit a new work-assignment analysis, which should lead to a greater number of deliveries per tender.

Mill tests confirm the fact that changing from 12- to 14-in. cans lengthens the doffing cycle of the drawing 35%; the cycle is lengthened 60% if 15-in. cans are used. In addition, there is an improvement in sliver variation because of the fewer can-to-can piecings both before and after the process. Waste is reduced because there are fewer tailings and less dumping of partially emptied cans.

Both the 14- and 15-in. cans can be used with 18-in.-gauge drawing frames; but some 15-in. cans are too wide-rimmed for 16-in. gauge, four-roll frames. Conversion of coilers is simple. The only requirements are a new coiler shaft with bearings and gears, a tube gear with new gear covers and plates, an upright shaft with bottom bearing and gear, and a new turntable-base cover and gearing.

The conversion described provides an overlapping lay of sliver in the can. This arrangement differs from other conversions that coil the sliver with a butting coil.

The basic difference is that the overlapping lay is caused by an over-center lay where the coil diameter is greater than the radius of the can; the butting lay uses a coil with a diameter smaller than the radius of the can. Overlapping is usually considered more desirable. This conversion is more elaborate and requires more new parts than a butting-coil conversion and is apt to be more costly in initial investment.

Coils Placed Imperfectly

Technically, disadvantages of the butting coil center around the imperfect placement of the coils of sliver in the can. The coils are likely to be more widely separated, which wastes space.

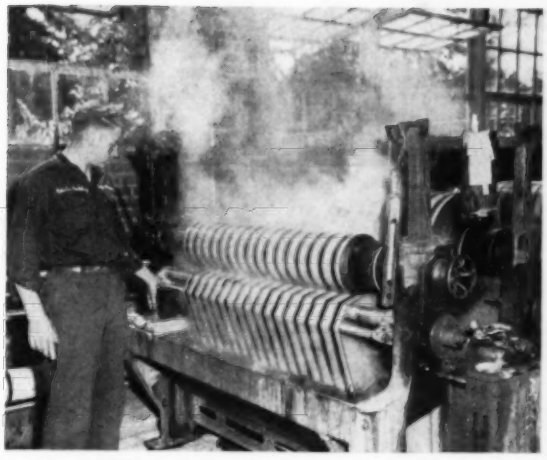
In addition, the coils are not placed as accurately and do not become packed as firmly. The butting coil creates a tightly packed raised area around the center of the can where each coil passes around the center of the hole.

Finally, the tendency of sliver packed in this manner to rise and topple after doffing reduces the practical capacity of the can and increases the probable waste loss. All these factors tend to reduce the effectiveness of the larger can.

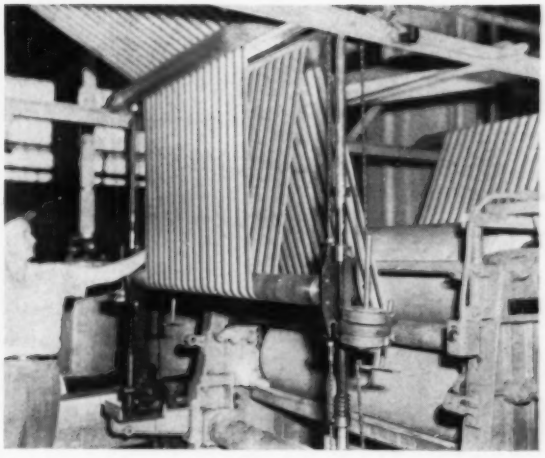
If large cans are used at the creel of the drawing frame, some type of extended creel should be installed to prevent damage to the sliver as it is dragged over the tops of the other cans. The larger cans intensify drag because of the greater distance the sliver has to travel.

The extended creel greatly reduces sliver variation caused by the stretching or feathering of the strand. The creel is built with support arms placed at intervals to indicate the proper placement of the cans, and the sliver is drawn up in a straight line without passing over the edge of the can. The strand is supported by other support arms over the cans closer to the frame.

New drafting elements, coilers, and extended creels are the major subassemblies that can be used to modernize and improve older drawing frames. The mill's present equipment can be converted at minimum expense by careful consideration and selection of units best suited for local mill conditions. Improved sliver and machine efficiency are worth the investment.



DESIZING AND DYEING are done on jigs that reverse automatically. Spreaders keep the cloth from wrinkling.



RESIN FINISH is applied in an air-set pad connected in tandem with a 90-ft. tenter. Multifan heating system has individual heat controls.

Mount Hope Resin-Finishes ACETATE-COTTON Mixtures

Getting a good resin finish on acetate-warp cotton-filled sportswear depends to a great extent on heat control during the final drying. Here's how Mount Hope's Henderson, N. C., plant goes about it to get—

- **Unimpaired strength**
- **Dimensional stability**

By ROBERT W. PINAULT, Assistant Editor, TEXTILE WORLD

VERY SIMPLE FINISHING METHODS are being used to produce a line of cotton-acetate fabrics at the Henderson, N. C., plant of Mount Hope Finishing Co.

The goods average 110x60, 4½ yds. per lb., at 45 ins. gray width. The acetate warp provides the principal decorative feature. It consists of white and Celaperm yarns in many variations. Solid stripes predominate, in tone-and-tone effects.

When the goods are ordered into process, they are made up into jig rolls of 800 to 1,000 yds. sewed with butt seams. The first operation is desizing, accomplished by running the goods in a 2% solution of Rapidase at 140 to 150° F. on the dye jigs. They are then given eight ends in hot water and a cold water shell-up, unless the order calls for a dyed ground.

Generally, only the white acetate warp yarns are dyed. Mount Hope uses conventional disperse dyes for this work, choosing those that will not stain the cotton filling. A typical routine starts the dyeing at 140° F. for two ends, followed by raising the bath to 180 to 190° F. and continuing at this temperature until the shade is matched. An overflowing rinse for two ends follows, and the goods are shelled up for drying.

The goods are dried at 44½ to 45 ins. on a long frame and returned for finishing.

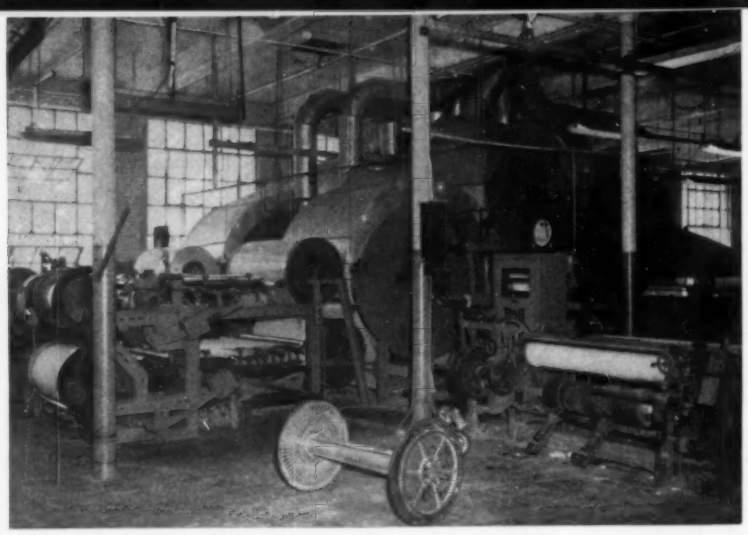
Heat Control Is the Secret

It is at this point that Mount Hope has succeeded in adding a resin finish to a cotton-acetate fabric without undue tendering of the acetate. A modified melamine resin is padded onto the goods in a heavy Van Vlaanderen pad with pneumatic set. The resin solution is calculated to leave 5 to 6% resin on the goods.

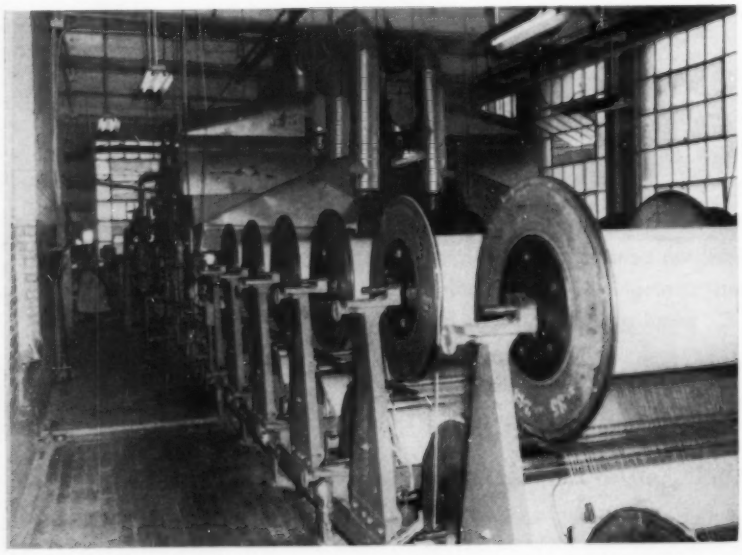
Padding, drying, and curing are done in one run on a 90-ft. tenter. The housing and heating equipment is particularly well adapted to this finish because the drying system is designed to provide several different degrees of heat in as many areas of the housing.

Mount Hope found that by setting the heat controls to provide gradually increasing heat as the cloth proceeded down the frame, the necessary curing temperature of 300° F. could be utilized without damage to the fabric because the time element at this temperature could be kept short.

No further finishing is needed when the goods come off the tenter. A residual shrinkage of 2 to 3% is obtained by this procedure and is satisfactory to the end use of the fabric.



FOUR CYLINDERS, two drying cans, and a double front give each of Opelika's slashers double the capacity of the regular three-cylinder slasher.



CREELS have been remodeled in the mill shop. The sheets of yarn pass over rods instead of over or under the beams.

BEAMS are taken from the slasher or loaded on the creel with an electric hoist. Manual lifting is cut to a minimum.

Opelika Doubles SLASHER Capacity

Output of the two slashers at Opelika Mfg. Co., Opelika, Ala., was more than doubled by—

- Installing double fronts
- Providing more drying surface
- Improving creels
- Power handling

By WILMER C. WESTBROOK,
Assistant Editor, TEXTILE WORLD

At Opelika Mfg. Co., Opelika, Ala., weaving capacity has been more than doubled without adding any extra slashers or slasher tenders. The mill now has 960 looms where formerly there were only 418, and yet the same two slashers and two slasher operators keep the looms supplied with sized warps.

The increased output of the slashers has been made possible by speeding up the cylinders, adding two drying cans, and installing a double front so that two warps can be sized at one time. Average delivery speed of the slashers is 60 yds. per min., which is equivalent to 120 yds. per min. of actual yards slashed on a slasher sizing single warps. With the four-cylinder and two-can drying surface, it is possible to operate at even higher speeds if necessary.

Each slasher has two 5-ft. cylinders, two 7-ft. cylinders, and two 30-in. drying cans. The drying cans are installed in front of the cylinders and are used as auxiliary drying units. One or both of the cans are bypassed by the yarn if a set is being run that does not require this extra drying surface. The 5-ft. cylinders are placed one above the other between the 7-ft. cylinders.

Yarn-Wound Squeeze Roll

The two large cylinders and the upper 5-ft. cylinder rotate counterclockwise, and the lower 5-ft. cylinder

rotates clockwise. The top drying can also rotates counterclockwise and the lower can clockwise. The yarn passes over rods that spread it over as much of the drying surface as possible. The method of having both sides of the yarn come into contact with the drying surface is said to give faster drying and better size penetration.

The slashers have variable-speed motor drives and are regulated by moisture-graphs. Maximum stretch is 2%, and moisture content is 7½%. Average size pickup is 11½% for most sets of yarn. The back squeeze roll is synthetic-covered, 8-in. dia., and weighs 450 lbs. The front squeeze roll weighs 700 lbs. and is wound with wool yarn.

The temperature of the size in the size box is maintained at 212° F. for maximum penetration of the yarn. The sheets of yarn are split between the size box and the cylinders by two chain-and-sprocket driven rods. The sheets of yarn pass over Teflon-coated rollers before and after being split.

Bad Selvages Eliminated

The slasher creels were formerly of the conventional type, with the yarn from one beam passing over or under the next beam in line. The top beam-bearing stands were cut at the mill shop and a plug welded in, raising the top beam bearings about 18 ins. Revolving guide rods were installed in the center of the creel for the yarn to pass over so that each beam turns independently of the others. The guide rods have practically eliminated rolled selvages, tight and slack ends, and other faults caused by uneven yarn tension at the creel.

The creels have a capacity of 13 beams, and some of the double sets require a full creel. A typical set is for the three front beams for a 22-in. warp-yarn beam and the remaining six to ten beams for a 40-in., 48-in., or 50-in. warp-yarn beam. The section beams have 32-in. heads; and the warp-yarn beams, regardless of length of barrel, have 26-in. heads.

The size is cooked in stainless-steel kettles in a room directly beneath the slasher room. The cooked size is stored in kettles and pumped to the size boxes as needed.

Electric Hoists Used

Manual lifting and hauling have been eliminated as much as possible at Opelika. Electric hoists are used to load and unload the creels. An automatic hoist and overhead rail system carries the full warp-yarn beams to the drawing-in room on the floor below.

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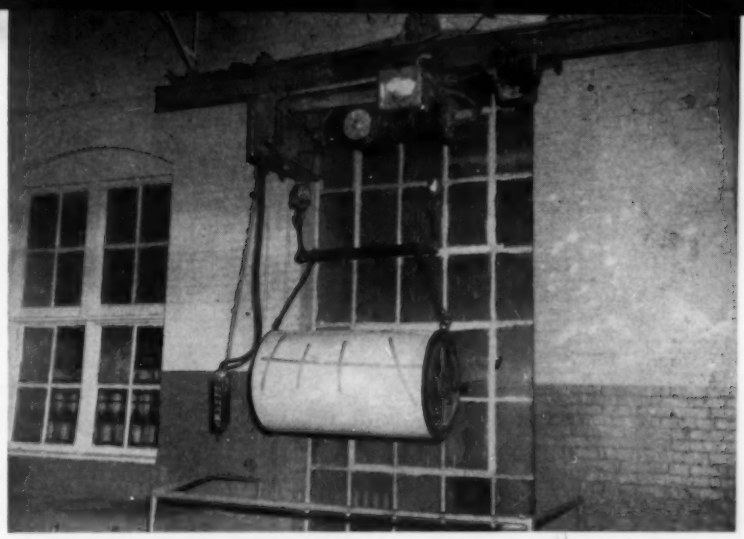
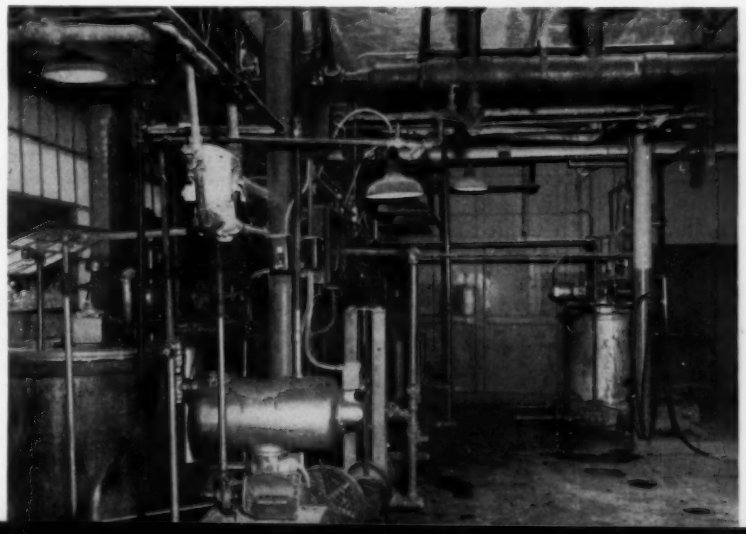


HOIST carries the full warp-yarn beam, by means of overhead rail, to a point over the drawing-in room and lowers it automatically.

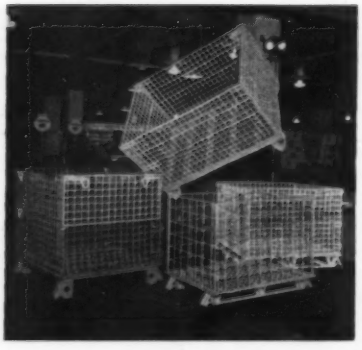
AIR LIFT, made in the mill shop, is used to raise the empty warp-yarn beam into position at the front of the slasher.

SIZE is cooked and stored in size room directly under the slasher room. Stainless-steel equipment is used.



New Machines and Ideas at the MATERIALS-HANDLING Show

- The Material Handling Institute's Exposition in Cleveland, Ohio, in June offered textile men much equipment designed to lower their operating cost. With a little engineering study, many machines not designed for textiles could be put to textile uses.
- Here's a report of the equipment designed for textile mills, which is a fair sample of the approximately 1,200 new developments shown at the exposition.



Wire-Mesh Boxes

Wire-mesh containers designed to handle and store yarn and cloth in wet processing were demonstrated by Pittsburgh Steel Co., Pittsburgh, Pa. From the time gray yarn is unloaded at the receiving dock of a mill until it leaves the plant as finished yarn and thread, it is handled in the containers.

With the boxes, vinyl-coated-fabric liners are used to protect the contents from chafing and other injuries. The liners are unsnapped at the top to fold the boxes for storage. (A-1)

Magnetic Motor Starters

Motor starters for several textile applications were shown by General Electric Co., Schenectady, N. Y. Special features are terminals designed for easy installation, accessible contact arrangement, long-life magnet circuit, dependable overload relays, and interlock arrangement.

Improved general features are: (1) three-point keyhole mounting; (2) knockouts on top, bottom, sides, and back; (3) all parts resist ordinary corrosion and moisture; (4) the only tool needed for installation or maintenance is a screwdriver; and (5) the removable cover is held firm by one screw. (A-2)

Truck-Battery Chargers

Four- and six-circuit battery chargers for lead-acid and nickel-alkaline batteries used in motorized hand trucks were shown by Hertner Electric Co., Cleveland, Ohio. Other chargers for electric industrial trucks were shown.

With the chargers, lead-acid batteries can be charged fully in 8 hrs.; nickel-alkaline batteries can be charged in 7 hrs. (A-3)

Roving Can

Seamless roving cans were shown by Spaulding Fibre Co., Inc., Dover, N. H. They are made in 12-, 14-, and 15-in. dia. Standard colors are red and gray.

The cans have tinned seamless-steel tops or rolled fibre tops with seamless galvanized-steel reinforced rings. (A-4)

► **Nine sizes of industrial solenoids** in 24 basic ratings were shown by General Electric Co., Bloomington, Ill. The solenoids are 22% smaller in size for the same rating than previous models. They can be mounted five different ways and have longer life. (A-5)

► **A line of power belt conveyors** was demonstrated by The Colson Corp., Elyria, Ohio. The conveyors are for portable or permanent installations. (A-6)

Folding Mesh Boxes

Storage mesh boxes for yarn and fabric in wet processing were shown by Union Steel Products Co., Albion, Mich. The containers, called Palletainers, have one drop-down side for easy removal of material.

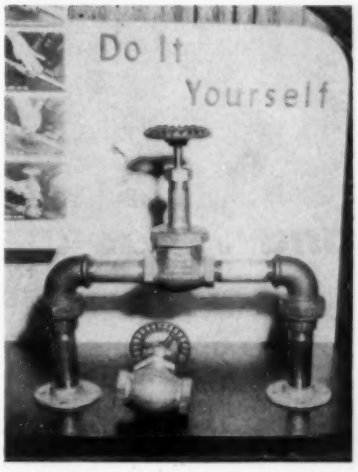
The boxes are made in 2-in. mesh so that materials inside may be dried quickly. They fold flat when they aren't being used. (A-7)

Power Floor Sweeper

A compact 28-in. rider-type power sweeper for mill aisles and warehouses was shown by G. H. Tennant Co., Minneapolis, Minn. The sweeper is 60 ins. long, without a side brush, and turns in approximately its own length. It travels at 2 to 8 mph. and cleans a 28-in. path; with an optional side brush, it cleans a 40-in. path.

A 28-in. main brush, revolving in a vacuum-equipped compartment, hurls waste into a removable dirt hopper. At the same time, a high-volume 11-in. fan draws dust, lint, and fine dirt from the brush compartment into a fabric bag.

The unit operates much like a car; clutch, brake, and accelerator pedals are operated by foot. The machine has a front-wheel drive and is powered by a 6.8-hp. engine. The transmission provides two forward speeds and reverse. (A-8)



Gate Valve

A renewable seat-ring bronze gate valve was demonstrated by The Fairbanks Co., New York, N. Y. The seat ring can be replaced in less than 10 mins. with only a screwdriver.

The valve is highly resistant to corrosion, erosion, and abrasion. Long wear and constant ease of operation result from the design. (A-9)

► **A quick-hitching automatic coupler** for trains of trucks was shown by Nutting Truck & Caster Co., Faribault, Minn. The coupler locks itself and does not come loose when a train of trucks is backed up or transported over rough surfaces. It is released by a foot trip bar on the side. (A-10)

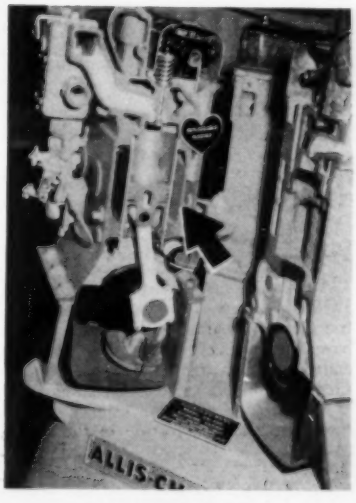
► **A line of truck casters** was shown by Albion Industries, Inc., Albion, Mich. The casters included molded Texite wheels, semisteel wheels, and swivel-lock and wheel-brake casters. (A-11)

Longer-Lasting Batteries

Batteries for electric trucks that last 20% longer than older models were shown by Exide Industrial Div., The Electric Storage Battery Co., Philadelphia, Pa. New materials, such as polyethylene, are used in the battery to increase the plate area without increasing the overall plate size. Consequently, power is boosted for peak loads (A-12)

► **Automatic battery chargers** for industrial trucks were shown by Motor Generator Corp., Troy, Ohio. Several models charge the battery right in the truck. (A-13)

► **An elevating hand-operated truck** that removes materials from motor trucks and rolls them up stairs and elevates them again was shown by The Fairbanks Co., New York, N. Y. (A-14)

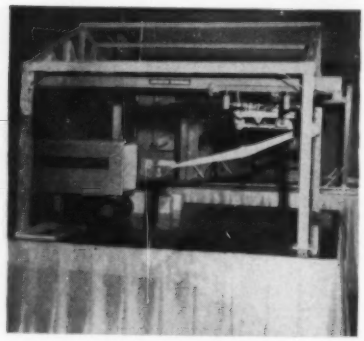


Industrial Trucks

Allis-Chalmers, Buda Div., Milwaukee, Wis., showed several types of liquid-petroleum and gas-powered industrial trucks.

A gasoline-truck motor with replaceable sleeves around the pistons (arrow in picture) was a feature of the booth. With this setup, overhaul is easy and cheap. (A-15)

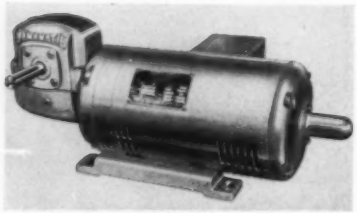
FOR MORE INFORMATION, circle the A-number on Reader-Service post card.



Unloader for Trucks

A monorail-mounted unloader for reaching into trucks and boxcars was operated in the booth of American MonoRail Co., Cleveland, Ohio. A crane-like arm reached into the truck and removed large packing cases and stacked them in orderly rows on the outside. (A-16)

► **Indicating lights** in several brilliant colors that can be seen from all angles were mounted on panel boards at the booth of General Electric Co., Schenectady, N. Y. The oiltight push buttons, selector switches, and accessories may be used on machines or panels for many control requirements. (A-17)



Variable-Speed Motor

A complete line of electric motors from 1/30 to 5 hp. was shown by Doerr Electric Corp., Cedarburg, Wis. The motors have: heavy steel frames with cast-iron ends; bolted-on removable bases, if desired; and prelubricated ball bearings.

A variable-speed motor (shown in picture) was a special feature in the booth. (A-18)

Batteries for Trucks

Two lines of industrial truck batteries, Thirty and Kathanode, were displayed by Gould-National Batteries, Inc., Trenton, N. J. The batteries have improved positive plates with heavy grid members; regenerative oxide renews itself throughout battery life; glass-tape insulation forms a virtually indestructible sheath of even thickness. (A-19)

► **Boxes for handling yarn** were shown by The Union Metal Mfg. Co., Canton, Ohio. The metal boxes have skids and several types of casters. (A-20)

► **A feeding table** with a scissors-type lifting mechanism was shown by The Ramond Corp., Greene, N. Y. Textile applications are loading folded cloth or grading folding cloth from the table top. (A-21)

Automatic-Drive Truck

Towmotor Corp., Cleveland, Ohio, showed a line of improved gasoline, liquid-petroleum, and diesel industrial trucks. The feature of the booth was a Hydrostatic drive with only one foot-control pedal, which provides immediate forward and reverse movement of the truck (A-22)

Battery Chargers

Two battery chargers were shown by The Electric Products Co., Cleveland, Ohio: (1) a single-circuit charger and (2) a four-circuit charger.

No manual attention is required during the charge. Complete recharging time is only 7 to 9 hrs. The chargers are self-contained, completely accessible, and fully automatic. (A-23)

► **Magnesium pallet dollies** were shown by Magnesium Company of America, Materials Handling Div., East Chicago, Ind. A 37-lb. dolly has a capacity of 4,000 lbs. (A-24)

► **Welded-steel pallets**, boxes, and trucks were shown by Fab-Weld Corp., Philadelphia, Pa. (A-25)

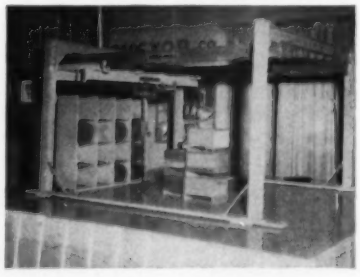
Cloth Containers

Containers for handling rolls and bolts of cloth during the finishing process were shown by Republic Steel Corp., Cleveland, Ohio. The boxes have two open ends for putting in or removing fabric.

Because the boxes have steel-rod framework at the top, they are moved easily from overhead. In addition, the bases are elevated so that they can be lifted by fork trucks. (A-26)

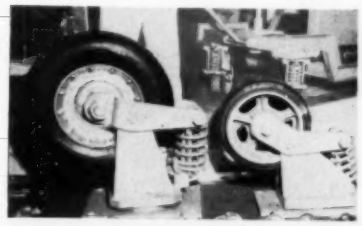
► **Gravity wheel conveyors** made of steel and aluminum were demonstrated by Sage Equipment Co., Inc., Buffalo, N. Y. The sections are straight or curved at 45 and 90° angles and come in several lengths and widths. (A-27)

► **A system for handling bulk starch** was shown by Tote Systems, Inc., Beatrice, Neb. Bins are filled with starch and may be transported from boxcars to any section of a plant. (A-28)



Automatic Beam Handling

A model automatic dispatch system said to be suitable for handling section beams and slashed loom beams was demonstrated by American MonoRail Co., Cleveland, Ohio. The Stacker Crane also handles drums. (A-29)



Grease-Sealed Casters

Grease-sealed casters with molded neoprene grease seals vulcanized to the bearing raceway were displayed by Faultless Caster Corp., Evansville, Ind. The casters are designed to be used in areas where steam, dirt, chemicals, or water are present.

A thrust bearing can be removed easily for cleaning or inspection. The caster tires are made of rubber, semisteel, and several other materials. (A-30)

► **Lightweight pallets** of welded-steel construction were shown by The Union Metal Mfg. Co., Canton, Ohio. One model has a two-way entry for trucks; another pallet has four-way entry. (A-31)

► **Metal storage cabinets** and other equipment were shown by Aurora Steel Products Co., Aurora, Ill. Steel lockers for storing tools and other purposes were part of the exhibit. (A-32)

Air-Powered Strapping

An air-powered tool for strapping cartons, crates, boxes, bales, and rods was demonstrated by Stanley Steel Strapping Div., The Stanley Works, New Britain, Conn. It is for ⅜- to ¾-in.-wide strapping up to 0.020 in. thick.

With the tool, every strap is easily and quickly pulled up to the same predetermined tension. It weighs only 4 lbs. A two-position throttle permits easy operation while strapping the top or sides of containers (A-33)

Lift Tables

A lift table said to be suitable for handling folded cloth for flat inspection was shown by Southworth Machine Co., Portland, Me. The table folds to only a few inches in over-all height so that it can be placed under a skid load of cloth; then it lifts to any height up to 37 ins.

The table is also used for efficient transfer of rolls of cloth. In addition, it can be used as a loading lift for light loads. (A-34)

Trucks for Stairs

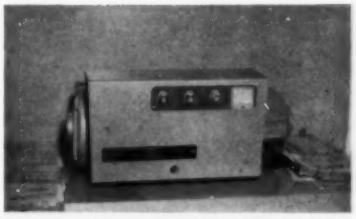
A line of hand trucks was shown by Nutting Truck & Caster Co., Faribault, Minn. One truck is equipped with V-belts so that it can be used on stairs without injuring wood surfaces.

This truck moves loads up and down stairs easily with the truck always parallel to the stairs. There's no intermittent raising and lowering the load with possible injury to persons or materials. (A-35)

Fork Lift Trucks

Clark Equipment Co., Battle Creek, Mich., showed 35 machines. The booth was arranged to show many kinds of lifting equipment and concentrated on fork lift trucks. Features of the improved fork trucks are 12-v. electrical system, fully automatic transmission, emergency fuel tank, and automobile-like controls as standard equipment. (A-36)

► **Metal framing** for making your own racks and shelving was shown by Unistrut Products Co., Chicago, Ill. You need only a wrench to assemble the parts, and they may be used again if desired. (A-37)



Battery Charger

A battery charger, Unimatic, for lead-acid electric truck batteries from 6 to 18 cells and 250 to 800-amp.-hr. ratings was demonstrated by General Electric Co., Direct Current Motor and Generator Dept., Erie, Pa.

The charger is designed to charge batteries at low cost in labor and maintenance. It charges nearly all industrial-truck battery ratings.

The charger is fully automatic and reduces the charging time. To operate it, you simply set three dials. (A-38)

► **A machine to lift fork trucks** to grease and maintain them was shown by The Colson Corp., Elyria, Ohio. The machine comes in two sizes, 6,000- and 12,000-lb. capacity. (A-39)

Materials-Handling Trucks

Hyster Co., Peoria, Ill., demonstrated several industrial trucks arranged schematically for materials handling. The schematic covered problems of plant layout, storage areas, and flow of materials. (A-40)

► **Metal framing parts** for storage racks, workbenches, ladders, bins, and other uses were shown by Structo Systems, Inc., Elyria, Ohio. The parts are packed 10 pieces to a bundle in 10-ft. lengths with 75 ⅜-in. bolts and nuts included. You need only a socket wrench to build the racks. (A-41)

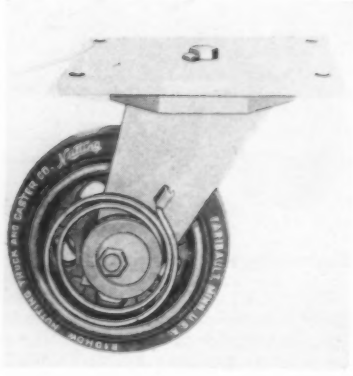
Strapping Machine

A push-button strapping machine was exhibited by Acme Steel Co., Chicago, Ill. With one touch of the cylinder bar, the electrically powered and controlled machine automatically tensions and cuts the strapping and joins the overlapped ends with two spot welds. These welds eliminate the cost of seals.

The machine is operated by a ¾-hp. motor on 115 v. The welding circuit operates on 230 v.

The machine can be adjusted to apply the right tension to strapping on heavy wood boxes or lightweight corrugated boxes. (A-42)

► **Conveyor parts** that you can install yourself to make overhead chain conveyors were shown by The Alvey-Ferguson Co., Cincinnati, Ohio. (A-43)



Swinging-Hub Caster

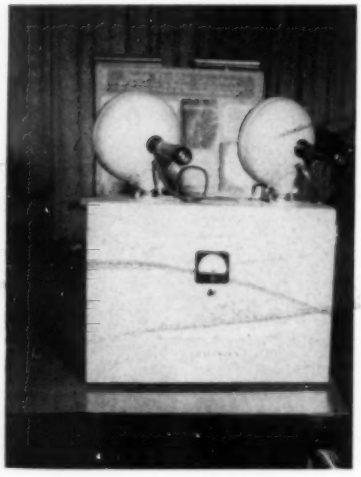
A caster with a hub that swings as it goes over rough surfaces was shown by Nutting Truck & Caster Co., Faribault, Minn. The caster protects loads, saves floors, and lengthens trailer or truck life by eliminating shocks, vibrations, tilting, and shimmying.

Dual springs provide equal load distribution with greater over-all strength and flexibility. (A-44)

Two-Way Radio

Two-way radio communication equipment for industrial trucks was shown by General Electric Co., Syracuse, N. Y. The radio mounts in any position in the truck except upside down and requires only a little more than 1 sq. ft. of space at the transmitter desk.

The combinations withstand rough industrial usage. The chassis is spring-locked into the extra-sturdy heavy-gauge steel case. For easy inspection and servicing, the case has drawer-type construction and a removable cover. (A-45)



Emergency Light

An emergency-lighting unit that lights automatically and instantly at power outage was shown by Edison Storage Battery Div., Thomas A. Edison, Inc., West Orange, N. J.

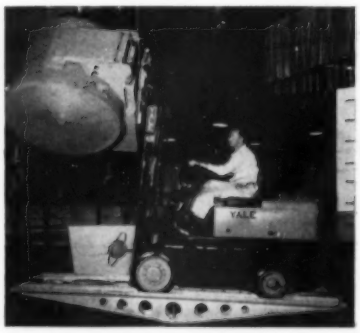
The unit connects to any 115-v. a.c. outlet. For emergency lighting, the light burns as long as 8 hrs. from the battery, which can be recharged rapidly.

The floodlights can be adjusted to any desired position. Lights are cut off automatically, and the battery is reconnected to the charging current when normal power is resumed. (A-46)

► **A light-duty electric tractor** designed for pulling several boxes of roving or spinning bobbins was shown by The Mercury Mfg. Co., Chicago, Ill. The boxes are also made by Mercury. (A-47)

Waste-yarn Containers

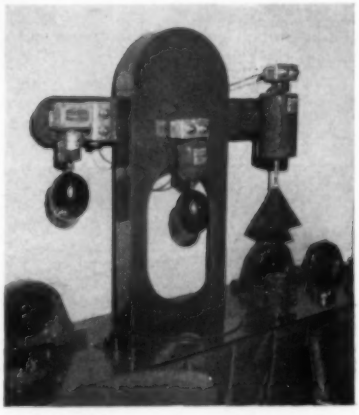
Containers for storing waste yarn, paper, and other waste products were shown by Dempster Bros., Inc., Knoxville, Tenn. The containers are for replacing drum-type waste receptacles. (A-48)



Gas and Electric Trucks

The Yale & Towne Mfg. Co., Philadelphia, Pa., demonstrated several models of gas- and electric-powered industrial trucks. The trucks include regular rider trucks and a Rider-Walkie truck for pallet handling. (A-49)

► **Lightweight hoists** in capacities of ½ through 12 tons were shown by The Yale & Towne Mfg. Co., Philadelphia, Pa. These hoists have 40% fewer working parts and 60% less weight than older models. (A-50)



Control Feed Switch

A bin-level control switch for bins or tanks of sizing materials, liquids, coal, and similar materials was shown by Stephens-Adamson Mfg. Co., Aurora, Ill.

As the materials lever on the instrument rises or falls, feeding stops or starts. The control will also operate a warning light or horn, if needed. (A-51)

► **An improved two-way radio** for industrial trucks was shown by Radio Corp. of America, Camden, N. J. The radio can now be powered by 12 v. in addito 6 v. (A-52)

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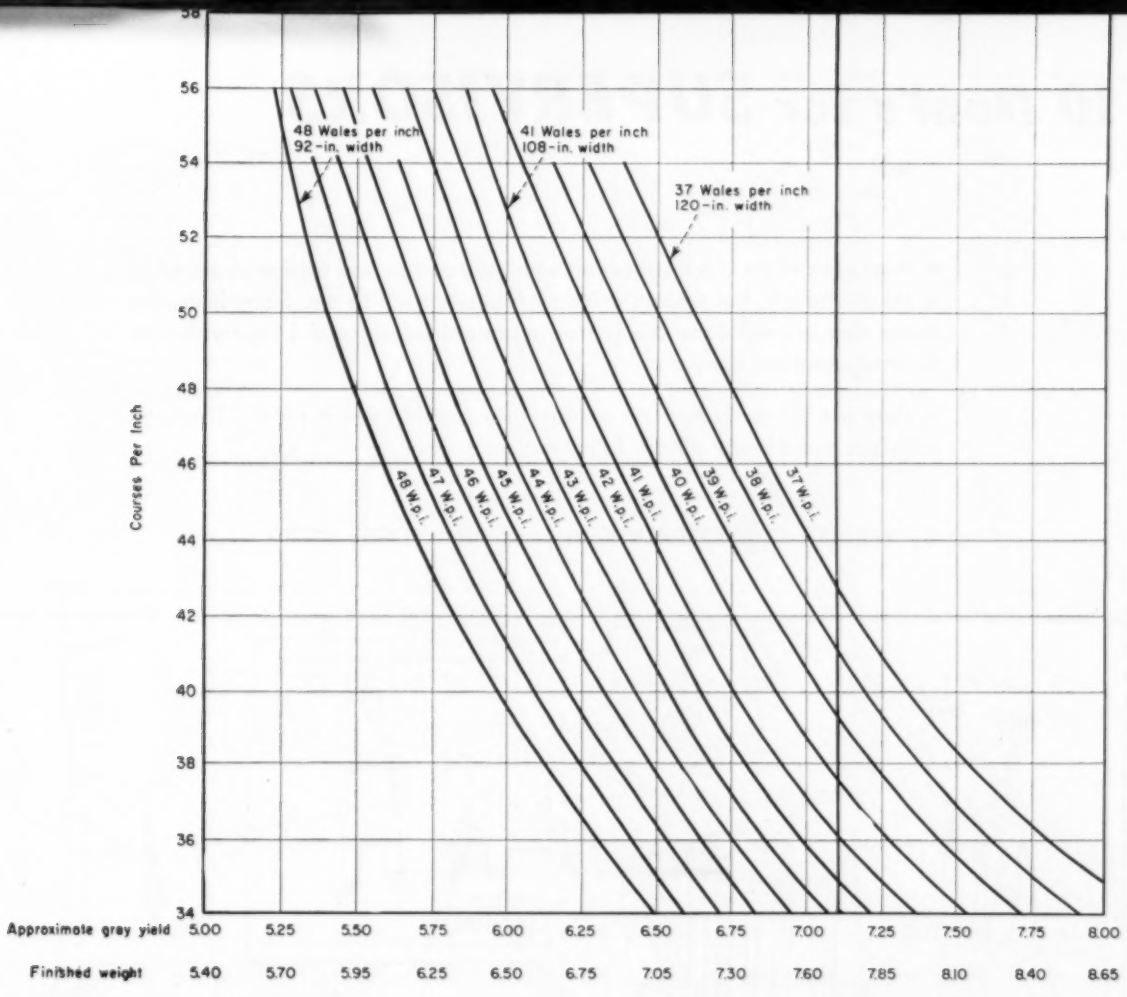


TRICOT YIELD for 40-den. fabrics can be rapidly calculated with this chart. The fabric should be finished at average frame tension. The wales and courses per inch are counted, the line is followed down the wales-per-inch coordinate to the courses-per-inch line, and the yield is read at the base of the chart. A gray fabric with 48 wales per inch and 48 courses per inch will have an approximate gray yield of 5.50 and a finished weight of 5.95. Test results that fall to the right of the heavy vertical line are not to the standard of Type A fabrics.

Quick Way To Check TRICOT YIELD

• A new method to check tricot yield, which uses a Lunometer and a chart based on the weight of yarn in 1 sq. yd. of fabric, may help to solve some of the problems in maintaining quality standards

By JAMES H. BLORE, Associate Editor, TEXTILE WORLD

MUCH ATTENTION has recently been focused on standards for tricot fabrics. Tricot fabrics have become increasingly popular during the last year for bed sheets, but high yields and loose constructions have endangered the future position of these fabrics.

One of the problems is the unstable characteristics of knitted fabrics. It is difficult to determine the correct gray yield and finished weight of tricot fabrics.

One large tricot mill in South Carolina worked out a method to enable even nontechnical people to calculate the approximate gray yield or finished weight of a sample. The calculation can be done in a few minutes.

How Yield Is Found

The requirements for the job are a Lunometer or a stitch glass and a prepared chart. The Lunometer, which is a vernier stitch counter made from plastic, is much quicker than counting individual courses and wales.

The Lunometer is placed on the fabric at right angles to the courses and moved until the fine vernier lines correlate with the courses and show a distinct moiré mark. The center

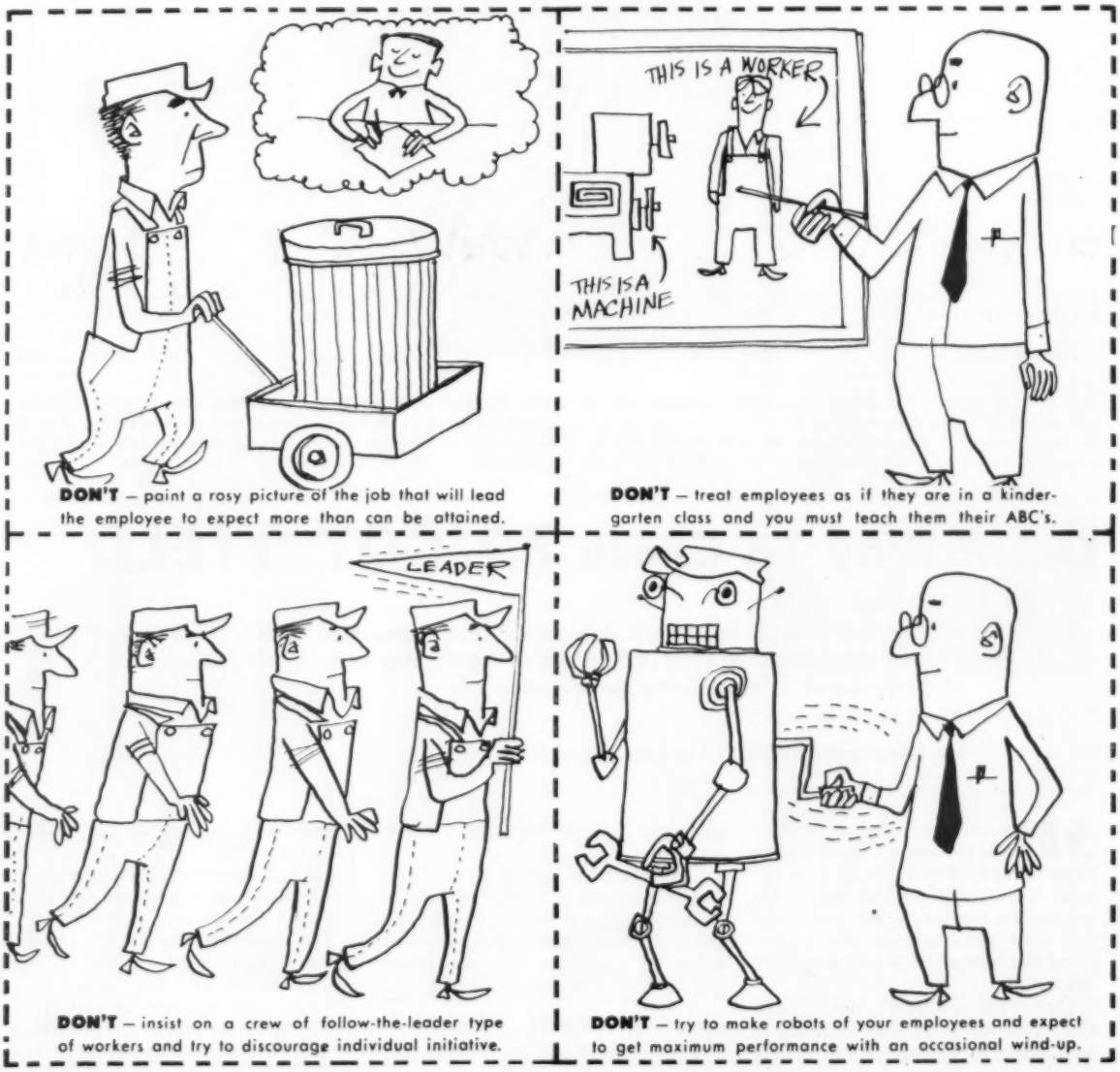
CONTINUED ON PAGE 176

10 Dont's for SUPERVISORS

• Most supervisors are bombarded with information and advice about what to do on the job, but seldom are they told what not to do. Sometimes, the things that are not done are just as important for successful supervision as the things that are done.

• Here are 10 dont's that every supervisor should keep in mind. They can help him avoid many pitfalls in human relations.

By **WILMER C. WESTBROOK,** Assistant Editor, TEXTILE WORLD



DON'T – paint a rosy picture of the job that will lead the employee to expect more than can be attained.

DON'T – treat employees as if they are in a kindergarten class and you must teach them their ABC's.

DON'T – insist on a crew of follow-the-leader type of workers and try to discourage individual initiative.

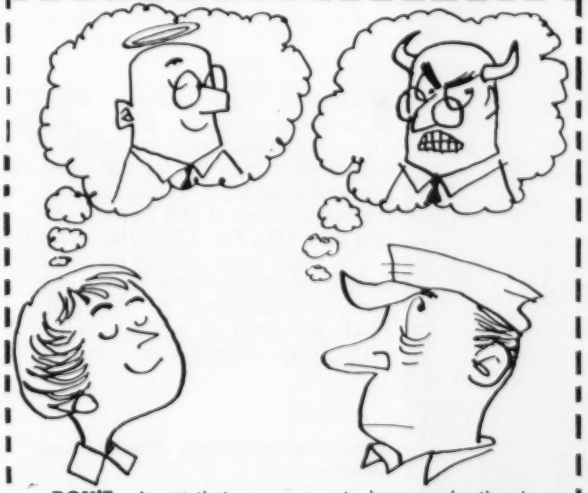
DON'T – try to make robots of your employees and expect to get maximum performance with an occasional wind-up.

DON'T – have a canned solution to dish out every time a worker comes to you with a problem.

DON'T – place yourself on a pedestal and claim to be above human failings and weaknesses.

DON'T – appoint yourself judge, jury, and prosecutor when you have to handle an employee problem.

DON'T – fail to realize the importance of being fair and impartial and of not having favorites on the job.



DON'T – forget that you may not always make the desired impression on others, regardless of your intentions.

DON'T – minimize the value of mutual respect, confidence, and friendliness in the promotion of good human relations.

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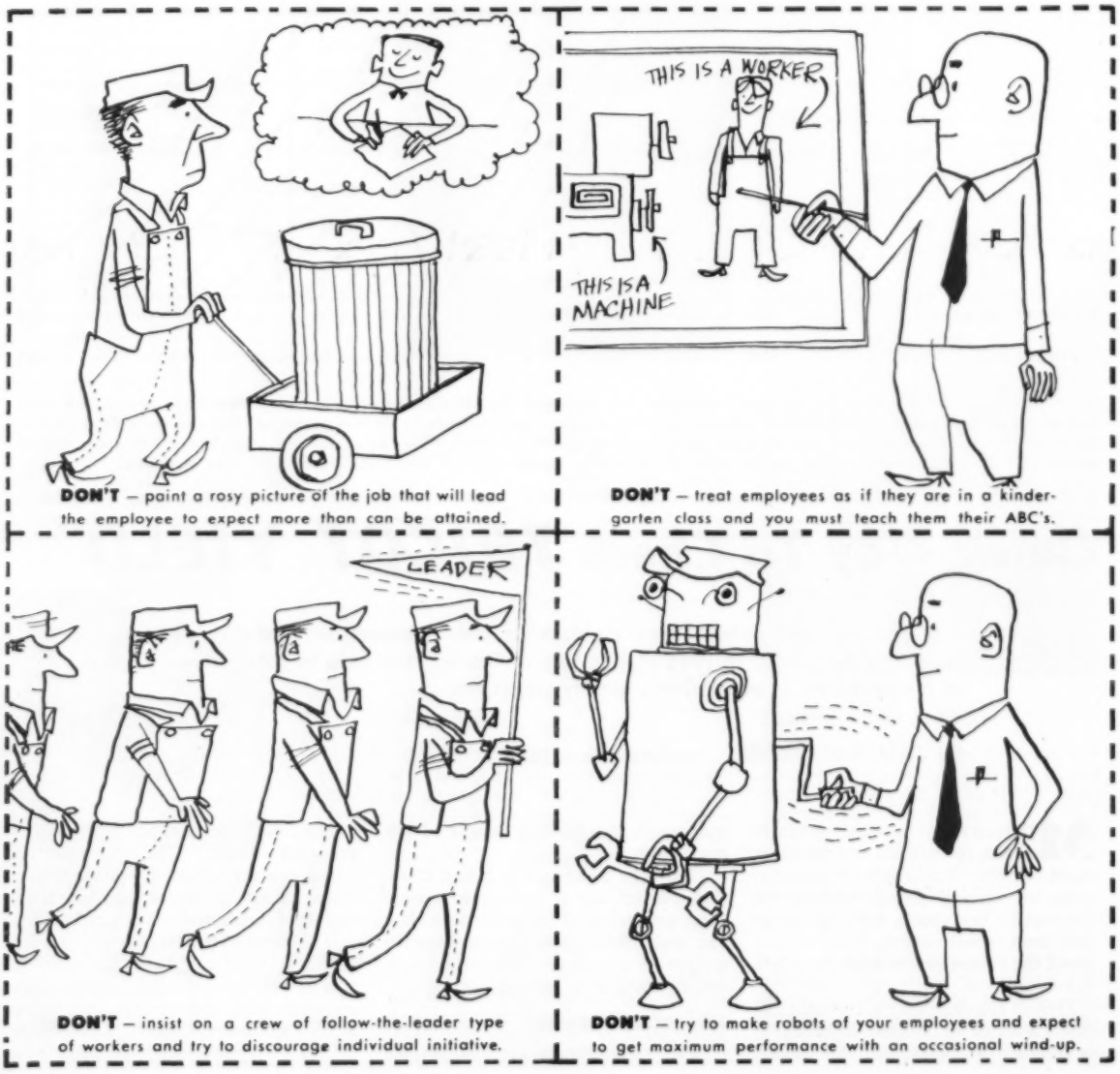

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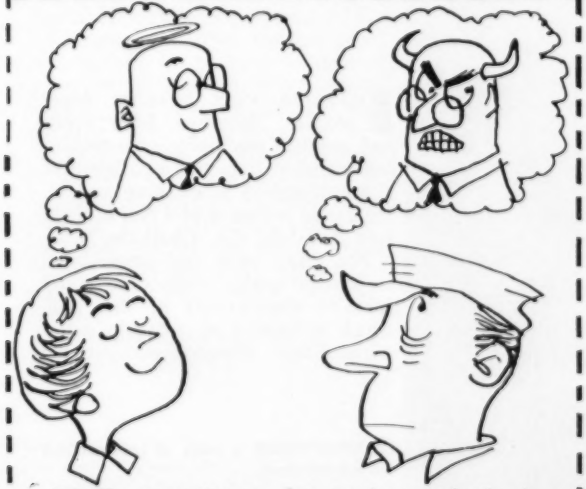

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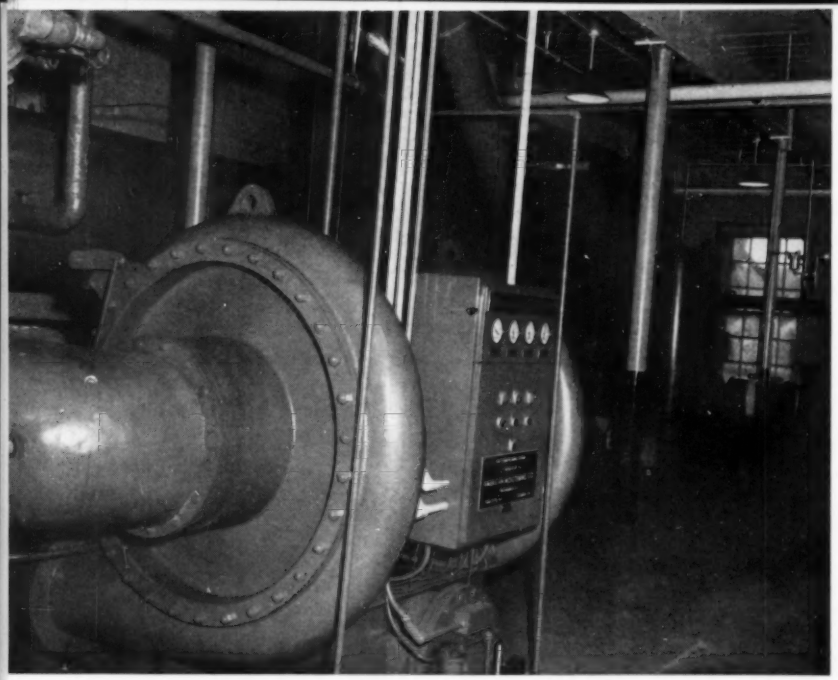


THE REFRIGERATION UNIT, rated at 322 tons, has a maximum capacity of 324 tons.

How Highland Park Stopped DIRTY YARN

Dirty air lowered yarn quality at Mill No. 1, Highland Park Mfg. Co., until the mill installed a central-station air-cleaning and refrigeration system in the carding and spinning departments. Advantages—

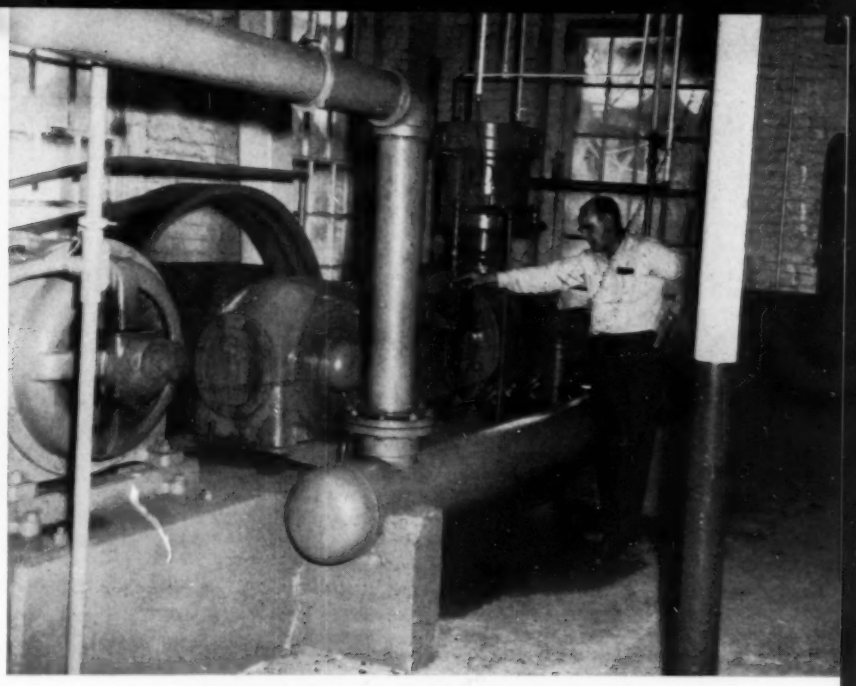
- Fewer seconds
- Less cleaning
- Better employee morale

By **WILLIAM G. ASHMORE,** Associate Editor, TEXTILE WORLD

IMPROVED YARN QUALITY, fewer seconds, decreased labor costs, and reduced machinery maintenance have resulted from the installation of a central-station air-cleaning and refrigeration system at Mill No. 1, Highland Park Mfg. Co., Charlotte, N. C.

For years, soot- and smoke-laden air lowered quality in the carding and spinning departments of this mill, which is located in a highly industrialized area. Absenteeism during the

COOLING TOWER is made of redwood and has induced draft.



AIR COMPRESSOR and pumps are located in the basement.

hot summer months was a problem. During the winter, dirty air would deposit carbon and tar in the work and on the machinery, floor, and walls.

No matter how carefully the yarn was carded and spun, foreign matter in the air would get into the stock, lower the end quality of the products, and cause excessive cleaning and maintenance problems.

The mill decided to clean up these problems once and for all by installing a central-station air-cleaning and refrigeration system. American Moistening Co. was selected to engineer the job, which was completed a few months ago.

Water Chilled to 46.6° F.

A refrigeration system was installed to supply chilled water to the air washers for both the carding and spinning departments. This unit is located in the mill basement. Basic equipment consists of a Trane CenTraVac 322-ton refrigeration machine that uses Freon II as a refrigerant. The chilled-water pump supplies 1,000 gals. of 46.6° F. water per minute to the air washers.

Cooled water for the refrigeration machine is produced by a redwood cooling tower located just outside the basement. This tower, with induced draft, can cool 963 gals. of water per minute from 95° F. to 85° F. when the outside air wet-bulb reading is 78°.

Chilled water from the refrigeration machine is pumped through a system of insulated supply and return pipes to the separate carding and spinning apparatus rooms.

The air washer for the card room has stainless-steel entering baffles and air-leaving eliminators installed on a concrete tank. The air washer is protected from lint and dirt by Auto-Airmat filters equipped with automatic drive and run-out warning signals.

A centrifugal fan supplies the card room with 13,800 cu. ft. of air per minute through galvanized-steel ducts. Maximum capacity is 18,200 cu. ft. per min.

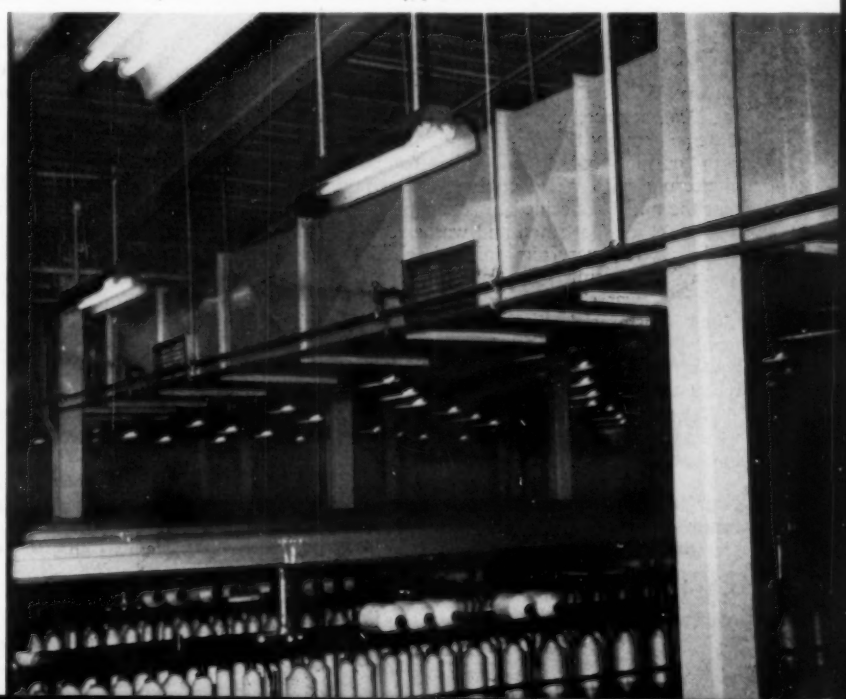
To give more flexible humidification and to decrease the requirements of the air-handling system, American Moistening atomizers and controls were installed for supplementary humidification in the card room. Other controls were supplied by Minneapolis-Honeywell.

Air Washer Is on Roof

The spinning-room air washer, located on the roof, is somewhat larger than the card-room washer; the tank is made of stainless steel instead of concrete to keep down weight. The system at present is supplying 60,000 cu. ft. of cooled air per minute, but maximum capacity is 90,000 cu. ft. in order to take care of future expansion.

The air filters, duct work, controls, and supplementary atomizers are substantially the same as for the card room.

The entire system is designed to maintain 80° F. dry-bulb temperature and 50% r.h. within both room areas when the outside temperature is 90° F. with a wet-bulb reading of 78°.



GALVANIZED-STEEL DUCTS supply the spinning room with clean air.

CUSHION-FOOT SOCKS are inspected inside out to check on the terry loops. Each machine knits about 6½ doz. socks each shift.

LOOPING is done with colored yarn. Red yarn signifies stretch socks. Production is up to 80 doz. per shift.

W. B. Davis Concentrates on CUSHION-FOOT SOCKS

• Swinging away from a diversified operation, this Alabama hosiery mill now specializes in one product. Better control of production and quality is possible. Modern conveyor systems are easier to install.

By **JAMES H. BLORE,** Associate Editor, TEXTILE WORLD

THE W. B. DAVIS HOSIERY MILL, INC., Fort Payne, Ala., acquired much knowledge and experience when it helped supply the Armed Forces during World War II with cushion-foot socks. The techniques learned in pioneering with these socks are proving valuable now that the mill has decided to concentrate solely on cushion-foot socks for sportsmen and workers.

The switch-over from infants', children's, and misses' hosiery has resulted in more-constant employment for workers, fewer styles to work with, and a better evaluation of customers' needs. Installation of modern equipment has been possible. A change to natural-gas heating has improved quality because about 80% of Davis' cushion-foot socks are white.

Colors were first introduced to get away from a clean white, but colors are now used as a selling point. California colors were developed, and now nine colors are run.

These colors are checked every month on every style. Four test socks are made for each shade. Bleeding and fastness tests are made each month, and periodic tests are made in a home laundry machine.

Outside Tests Are Made

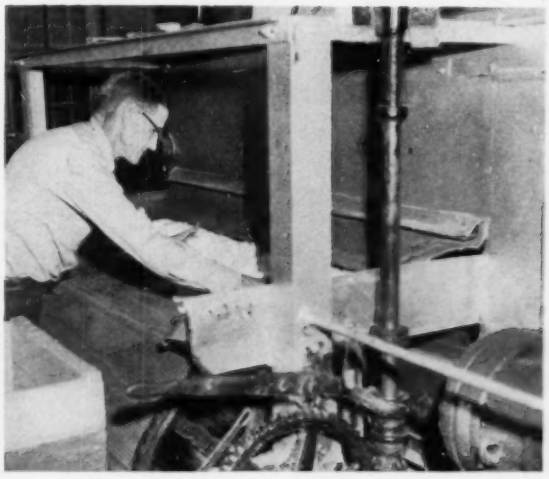
When variations in quality are suspected and when new lines are introduced, an unbiased report is obtained from an outside testing laboratory. Color-bleeding, ball-burst, and appearance tests are included in the report.

A production report covering waste and weight of goods is made out weekly to keep management constantly aware of quality trends. Waste from each style is recorded and the production is checked with pay-roll figures. The average waste for each dozen is calculated and compared with the costed weight.

Spot-checks are taken on yarn from three or four cases daily. The fixers work closely with management. If a fixer has to change his machines too often to keep his socks correctly sized, he reports the yarn to the superintendent.

Each machine is checked several times each shift by pulling a sock on a form. Men's stretch socks are tested on 16-in. forms. Boys' cushion-foot sock sizes range from 8½ to 10½, and men's socks are from sizes 9½ to 13.

CONVEYOR SYSTEM aids inspection of gray goods. Menders work behind the conveyor. Only perfect goods go on the conveyor.



DYED SOCKS are extracted and partially dried for 15 mins. at 160° F. Ageing before boarding helps appearance.

Stretch socks are made to customers' requirements.

Hemphill machines are used to knit the cushion-foot socks. The 3½-in.-dia. machines are 18 gauge with 108 needles. Attachments to knit the cushion foot were made in the mill's own machine shop. There are also 40 Hemphill dial-rib machines, which knit socks with 2x2 rib tops.

Banner split-foot machines have been modified so that the terry sinkers operate from the needle butts. Rubber tops are put on slack socks. A set of 12 of these machines produce about 80 doz. pairs of socks each shift.

Each sock is turned as it leaves the knitting machine, and the terry loops are checked in addition to usual faults. Fixers, who look after 45 machines, spot-check each machine and examine socks for needle lines, looper courses, and terry faults.

Each size is identified with a colored ticket, and each lot can be quickly traced to the operator. Faulty goods that can be mended are tied to the top of each lot, and waste is tied separately.

The knitting-room clerk weighs the waste and the goods and records them on the production chart. A weekly report of the stock position is kept for orders on hand. The position of each style, orders received, orders shipped, and the dozens made are recorded on this report, which regulates machine change-overs if certain styles get low or if knitters need time off.

A daily report made on each operation is available to all personnel. The production manager goes over waste reports with the people concerned if waste is off standard.

Looping is done on 12-point loopers, and blue yarn provides a distinctive mark. Red yarn signifies stretch socks. Good machinery maintenance helps some loopers to process 80 doz. socks per shift.

Conveyor Aids Inspection

A conveyor table has been installed alongside the mending operation. All socks are inspected at least one day after knitting on forms, and they are turned inside out. Faults that are found are charged to the knitter or the looper concerned.

Perfect socks are tied in dozens and placed on the conveyor. Socks to be repaired are passed to menders who work on the opposite side of the conveyor. After mending, these socks are placed on the conveyor. Each inspector is kept supplied with work, and about 200 doz. can be inspected daily by each girl.

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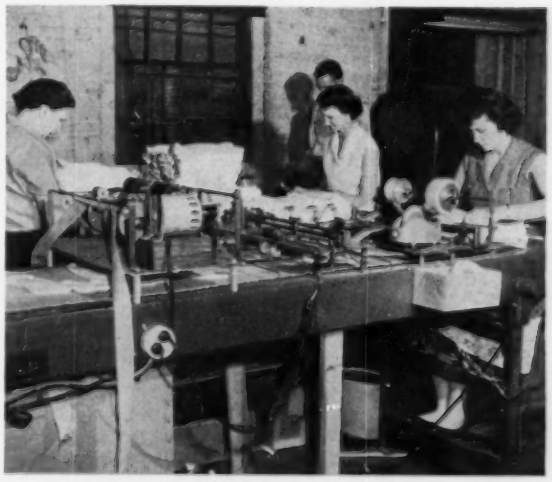
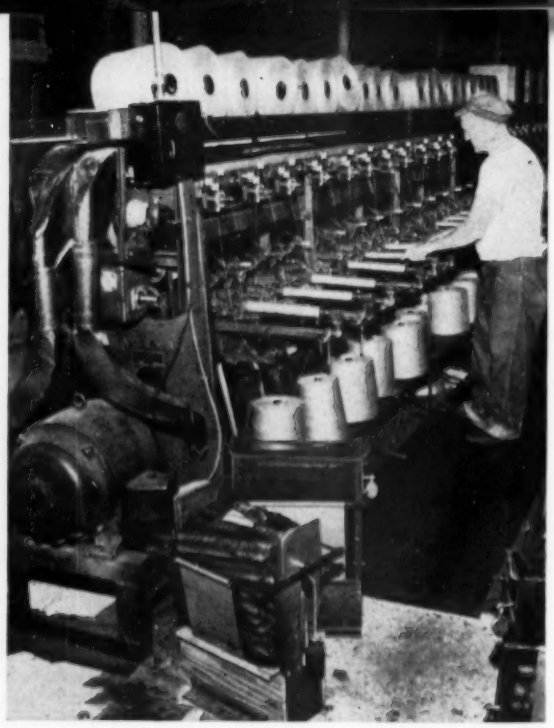
COLOR CHECKS are made in the boarding room in addition to checks made in the dyeing and finishing rooms.



TRANSFERS are applied on this mill-made machine, which helps three girls process 200 doz. socks per hour.

SKEIN-DYED YARN is transferred from skeins to tubes on Universal winders.



FILLING is copped on Lazenby winders. Conveyors remove empty tubes and copped filling.

Making the NEWER CARPETS For Higher Sales

• Setting out on its own in carpet selling was a new venture for this established carpet manufacturer. Its new sales pitch called for distinctive carpets. Here's how the mill makes the carpets—

By **RICHARD B. PRESSLEY,** Associate Editor, TEXTILE WORLD

A NINETY-YEAR-OLD Eastern carpet manufacturer established its first sales organization only three years ago after using selling agents for 87 years. The manufacturer is now striking it rich on wilton, velvet, and tufted carpets and rugs. It also has big sales in cut-to-fit automobile carpets.

To break into sales in the established carpet trade, the mill had to restyle its carpets with an assortment of new designs and colors. At present 29 basic designs, each in up to 15 colors, are stocked at the mill warehouse.

The company has made a good sales pitch and is backing it up by a constant improvement in mill equipment:

1. Its tufting capacity was doubled in 1955. These additions included new tufting machines, new dyeing machines, and new drying equipment. It has also developed its own process for making tufted textured patterns.

2. New looms have been installed. The oldest wilton wide loom in the mill was installed in 1947. Last year four new wilton looms with electric drives were installed to be tested.

Start With Raw Yarn

The mill has no yarn-manufacturing equipment; yarns are brought in on skeins. Wool, cotton, rayon, nylon, and saran yarns are used. Yarns are stock-dyed when they are received or are skein-dyed at the mill. Wool yarns are scoured first.

The skeins are wound to 20-lb. packages on paper tubes on Universal winders. Then the yarn is twisted in two or three plies, if necessary.

Filling yarn is copped on Lazenby filling winders from 20-lb. cheeses with pigtail creels. The winding machine has several modifications made by the mill: (1) a conveyor belt carries the empty tubes to one end of the machine and deposits them in a box, (2) the filling cops are removed by a conveyor and chute that place them in a nylon net bag at the other end of the winder, and (3) two spindles are controlled by the same automatic-stop mechanism so that both cops are doffed at once.

The nylon bags of filling are taken to the filling-cop sizing room. Several bags at a time are lowered into sizing vats with an electric hoist. The cops

are removed from the sizing mixture, carried to the looms still in the nylon bags, and placed in filling storage boxes. The filling is woven while it is still wet. As a result, there's better adhesion between warp and filling yarns.

Warps for velvet looms and stuffer and chain warps for wilton looms are beamed on section-mill warpers designed at the mill. There are 144 ends in a creel, and yarn-package sizes are 2 to 5 lbs. The creel is equipped with a mercury stop motion.

The beam is divided into 18 sections and is 108 ins. wide. The 144 creel ends are run in units of three sections. The warper operates at 240 yds. per min.

Warpers of the same type for narrow looms are 38 ins. wide.

Slash Beams for Backing

Cotton, rayon, and jute yarns for chain and filler beams are slashed. Jute yarns are slashed from creels containing 20-lb. cones of 14-lb. yarn. The cones are creeled end to end. All other yarns are slashed from section beams.

Rayon yarns of 1,100 or 1,165 den. are slashed on a special rayon slasher built to the mill's specifications. Six section beams are usually run for each set, but there is creel space for 18 beams.

The slasher has four banks of drying cylinders; each bank contains six 20-in.-dia. cylinders. The first four cylinders next to the size box are covered with cotton cloth to keep size residue off the cylinders. Squeeze rolls are covered with blankets. The slasher speed is 25 yds. per min.

Three other slashers for cotton and jute yarns are similar in construction to the rayon slasher.

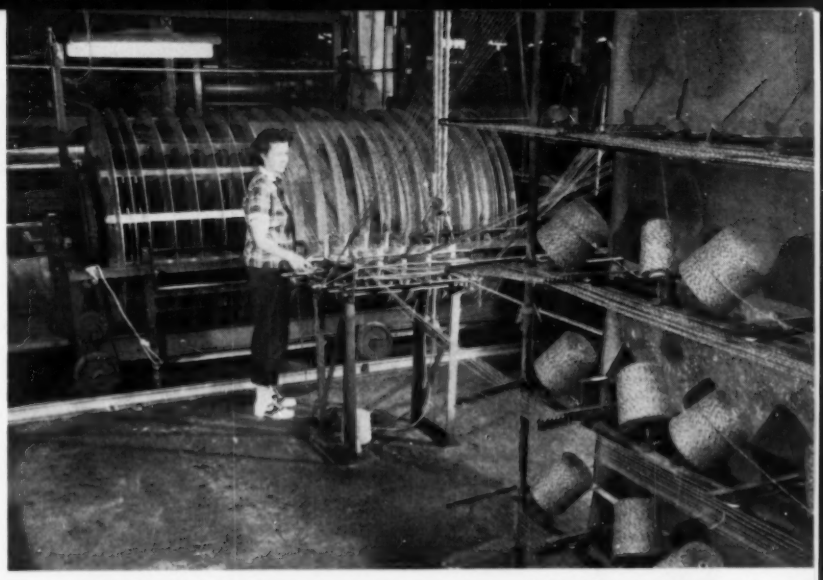
Looms Are 27 to 216 Ins.

Looms range in width from 27 ins. to 18 ft. Loom speeds are standard for carpet weaving. All wilton looms are Lansdowne looms, and the speed is: 27-in. loom, 72 ppm.; 108-in., 66 ppm.; 144-in., 40 ppm.; 180-in., 34 ppm.; and 216-in., 29 ppm. Velvet looms run about 20% faster; for example, 27-in. looms operate at 86 ppm.

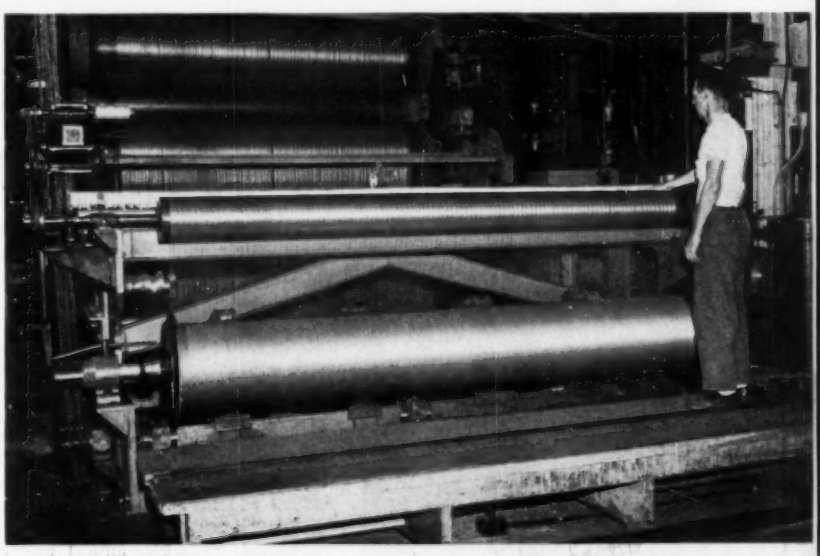
The wider wilton looms are operated by one weaver for each loom. The jacquard ends are creeled by one creeler for every two looms. Loomfixers have 10 looms.

All creels were made by McBride. On 144-in. looms, there are 1,152 ends in the creel on standard styles of carpets. Looms 180 ins. wide have 1,440 ends, and 216-in. looms have 1,728 creel ends. Again as in warping, all creel ends are tied end to end.

Rayon chain beams are retied at the

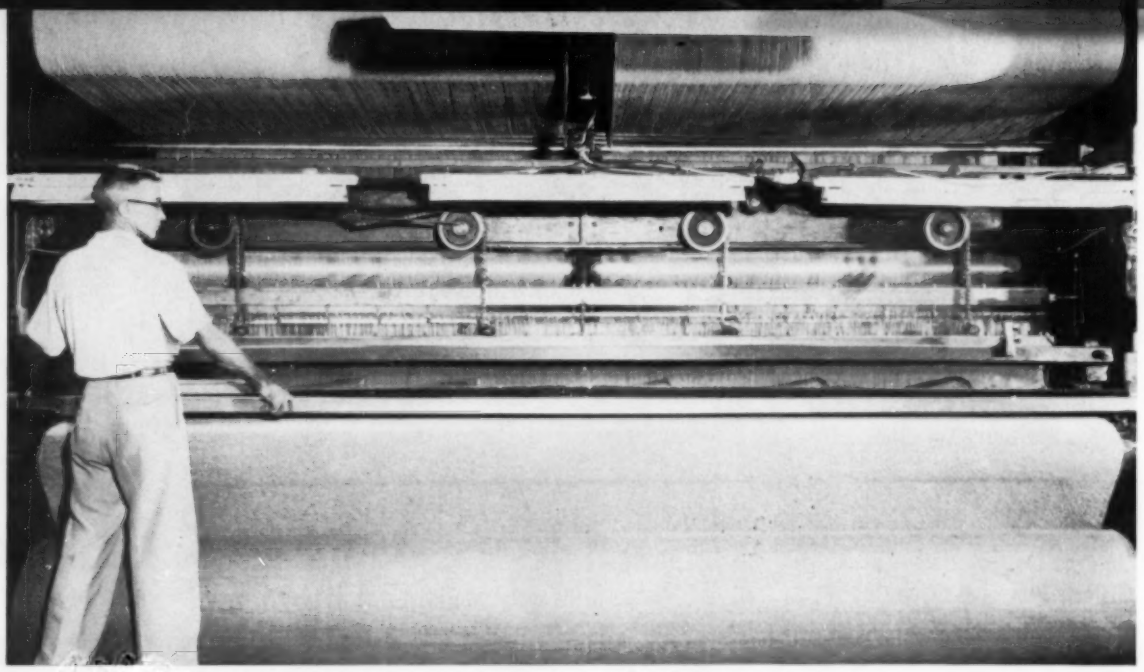


SECTION-MILL WARPERS designed at the mill spread 144-end units into three sections.



RAYON SLASHER with 24 cylinders slashes 1,100- and 1,165-den. rayon chain yarns.

ALL TUFTING MACHINES are made by Cobble Brothers. Four widths are used.



VELVET LOOMS (shown) and wilton looms are both used to weave carpets from 27 ins. to 18 ft. wide.

loom with a Barber-Colman tying-in machine. But warps of other fibers have to be tied by hand.

New Looms Run 25% Faster

The four newest looms were installed in the summer of 1955. They are Lansdowne wilton looms 27 ins. wide. The looms have Warner electric drives, and each loom has a control panel. The drives and controls have given little trouble that the mill electricians could not correct.

The speed of this loom on wilton carpets is 100 ppm; on velvet carpets, the speed is 120 ppm. The looms operate approximately 25% faster than other 27-in. looms at the mill. A weaver operates two of the looms.

The wire motion of all looms may be of any one of three types: (1) straight, (2) straight with a cutting end, or (3) irregular for textured patterns. Therefore, with several gauge thicknesses available, almost any desired pattern can be woven. Carpets are usually doffed at the loom in 24-yd. rolls.

SIGNAL SYSTEM (arrow) on wilton loom is used to show the weaver warp breaks.

Tufting Efficiency Is High

Perhaps even greater gains in efficiency have been made in tufting than in weaving. The mill started its first tufting machine soon after the end of World War II and is constantly increasing its machinery and production output. At present, four widths of machines are being run at the following speeds: 216 ins. wide, 650 courses per minute; 180 ins. wide, 550 courses per minute; and 62- and 54-in. machines at 750 courses per minute. Each machine produces 700 to 800 yds. of fabric every 8-hr. shift.

As many as five narrow carpets are tufted complete at one time on the wide machines. Efficiency with no time allowed for creeling at style changes averages 65%. Since cones of yarn are creeled by transferring the ends from one cone to the next, little time is lost in normal creeling.

All tufting machines were made by Cobble Brothers Machinery Co., Inc. There's an operator for each machine. In addition, there are an inspector-burler and a girl to tend the creel. The two-deck creels for each machine are located at the back and also at the two sides of each machine.

Find Broken Ends Quickly

The mill has an original system to help the creel girl locate each broken end. The creel is divided into sections, and each section is lettered and numbered. The creel-tube position at the top of the tufting machine is also lettered and numbered to correspond to the creel identification system. When an end breaks, the machine operator turns on an electric light at the machine to show exactly where the end is broken. Then the creeler spots the end quickly.

Tufting machines are kept in good mechanical condition by a machinist. But routine fixing in keeping a machine running, such as replacing hooks and needles, is done by the machine operator. Major breakdowns are fixed by the machinist.

Machines are overhauled at pattern changes. Blades are changed on an average of every two weeks when cut pile is being made. Hooks are changed about once a month.

The tufting department does not have humidification equipment.

How One Mill Saved $4,816 Yearly With REVOLVING CLEARERS

• A Southern cotton-yarn mill reduced clearer-cleaning time over 50% by changing from flat to revolving clearers and cleaning them with a mechanical cleaner built in the mill shop

By JACK ALLAN

DURING THE LAST TWO YEARS, we reduced our clearer-cleaning costs $96.32 per week in the spinning room. This saving was accomplished by changing from flat top clearers to revolving clearers and by building a mechanical cleaner for the revolving clearers.

We formerly cleaned flat-top clearers about every two hours on coarse yarns. This schedule called for the roll picker to pick flat clearers four times a shift. In addition, she picked both the backs and the fronts of the clearers once per shift.

In practice, we found that there was no way to be sure that both fronts and backs of clearers were thoroughly cleaned. Actually, there was no way to be sure that the fronts were picked; and that is the chief weakness of flat clearer systems. Because they lie flat on the rolls and cover the roll system, flat clearers make good cover-ups for the roll picker who wants to beat the game by skipping a few clearers.

The amount of clearer waste left on flat clearers cannot be easily detected. To check on new or careless roll pickers, the section man has to pick up each clearer. With 4,940 flat top clearers on 130 spinning frames, it is not an easy job to inspect roll-picker work and schedules. Flat clearers show no evidence of faulty cleaning until waste starts running into the yarn.

Revolving Clearers Tried

Since we had no inspection control over flat clearers, we ordered revolving clearers for a trial frame. These clearers plainly show the amount of clearer waste at all times. The trial frame soon proved that potential savings justified changing clearers in the whole spinning room.

Here's the way the actual figures on revolving clearers stacked up against the flat clearers:

Flat clearers were cleaned every two hours and took 84 mins. of labor time per frame per week. That much work costs us $1.26 for labor. With 130 spinning frames, the cost was $163.80 weekly.

In contrast, we clean the front line of revolving clearers only once per week. This schedule takes only 36.48 mins. of labor time per frame per week. In addition, the back line of revolving clearers is cleaned every six weeks. This cleaning represents 27.36 mins. of labor every six weeks per frame, or 4.56 mins. per frame per week.

Consequently, we spend only 62¢ per frame per week to clean revolving clearers, back and front. For 130 frames, the cost is $80.60 weekly, a saving of $83.20 weekly ($163.80 − $80.60) we made by going from flat to revolving clearers.

Cleaning Is Difficult

Revolving clearers are tough to sell to spinning help. These clearers run longer between cleanings, but they are difficult to clean without mechanical aid. For this reason, many mills still prefer to pay higher labor costs for cleaning flat clearers. Revolving clearers are so tough to clean by hand that many of our roll pickers preferred to lose a day's work on the days we clean our shiny, bright new clearers.

First, the roll picker has to hold the clearer with both her left hand and arm while she cleans with her right hand. She breaks a lap of clearer waste with her right hand and then pulls the loose lap away from the clearer. Waste is stored in her apron pocket.

Since the lap of waste has been calendered by a week's contact with the roll system, it is hard and compact. The roll picker has to tug hard with her right hand, often using a stand hook, and at the same time work hard with her left arm and hand to adjust and hold the clearer. Six laps of clearer waste are removed from the clearer before it is returned to the roll stands.

Because of the constant holding and repositioning done by the left arm and hand, revolving clearers are about as easy to clean by hand as a live bear. To eliminate the work involved in holding the clearer, our shop built a portable cleaning device. This cleaning box is rolled easily through the spinning aisles, and it has reduced the amount of this type of work by 42%. Here's how the cleaning box works:

CONTINUED ON PAGE 178

Comparative Cleaning Times for Revolving Clearers

Hand cleaning

Job	Time (mins.)
Pick up clearer	0.03
Hold clearer while cleaning	0.18
Break waste lap	0.30
Remove waste lap	0.30
Shift clearer for new lap	0.12
Replace clearer on frame	0.03
Total	0.96

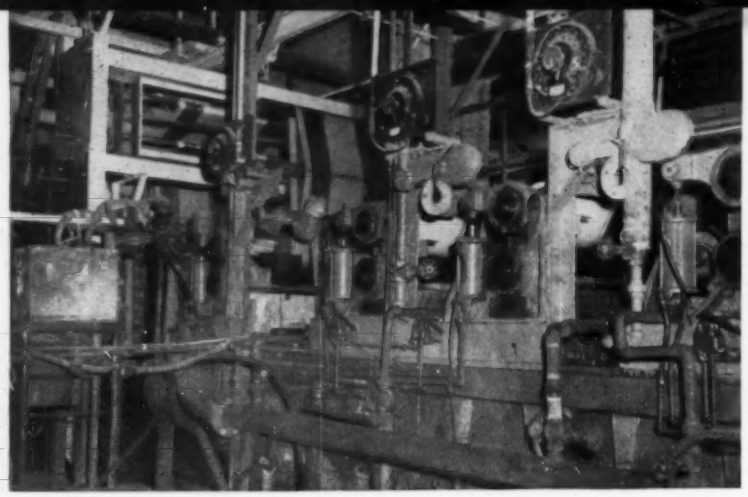
0.96 min. × 38 clearers per frame = 36.48 mins. per frame

Mechanical cleaning

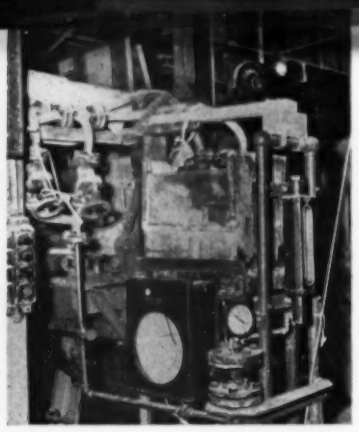
Job	Time (mins.)
Pick up clearer and place in holder	0.04
Break six laps on clearer	0.24
Brush waste off clearer	0.16
Replace clearer on frame	0.12
Total	0.56

0.56 min. × 38 clearers per frame = 21.28 mins. per frame

Time saved: 15.20 mins. per frame



TREATING RANGE for the Heberlein process is set up to treat, wash, and neutralize continuously. Individual controls adjust tensions in the range so that break-outs and wrinkles are avoided.



METERING DEVICE keeps a constant check on the strength of the acid and maintains the proper level in the treating compartment. Acid temperature is recorded, and circulation through a large tank helps keep temperature down to the desired 60° F.

Sulfuric Acid Helps Produce DURABLE COTTON FINISH

Durable finishes for cotton goods are not as recent as you might think. Old-timers in cotton finishing will recall the Heberlein process, first licensed in this country 27 years ago.

Here's how one bleachery produces the Heberlein finish in several variations. The finishes are good for the life of the fabric and include—

- **All-over effects**
- **Patterned and three-dimensional effects**

By ROBERT W. PINAULT, Assistant Editor, TEXTILE WORLD

A VARIETY OF FINISHES that last the life of a fabric can be produced by treating the fabric with strong sulfuric acid. The treatment is an old-timer known as the Heberlein process. Its effect on cotton is to produce a surface effect that resembles parchment.

One bleachery that uses the Heberlein process produces highly transparent effects by treating the whole fabric. Variations include local parchmentization by printing either with acid or by setting up resist areas by printing on an acid-resistant material. A third process that produces three-dimensional effects is gained by reprinting the acid-treated material with caustic soda to get a plissé effect.

One of the major constructions treated by the Heberlein process is 76x72 9.00-yd. combed-yarn lawns. The goods are first put through a gas singer. An enzyme solution in the quench box starts the desizing process. The goods are piled in bins for several hours after singeing to get a good conversion of starchy material.

The fabric is pulled from the bins through a log washer, where most of the sizing material is washed out, and proceeds continuously to a caustic saturator, through the heater tube, and into a large J-box.

The hot causticized cloth remains in the J-box for about 1 hr. and then is led into another washer where the great majority of remaining impurities are washed out. Saturation in peroxide follows; then the goods are once more heated in the heater tube and remain in the insulated J-box for an hour. Washing, scutching, and can-drying complete preparation of the fabric for printing or dyeing.

Mercerizing Is Important

Goods going into the Heberlein process are mercerized twice. Before acid-treating, the goods are mercerized wet on a tenter in 55° Tw. caustic, thoroughly washed, and tenter dried. It is necessary at this point to be sure that all threads are square and true; so the goods are hand-guided and straightened before the mechanical guiders on the frames take over.

The bleachery prints or dyes the fabrics before the acid treatment. Colors must be selected that are not affected by the strong acid but at the same time are satisfactory for light- and washfastness.

The acid treatment is done on an open-width range that provides for continuous acidifying, washing, and neutralizing in one run.

The cloth is well skied before it enters the first box of the range to get rid of excess heat from the drying. The acid-treating box is lead lined and equipped with stainless-steel guide rolls that run in graphite-block bearings.

The cloth enters into 57° Bé. sulfuric acid at 60° F. and gets 5 to 6 secs. immersion before being squeezed out and passing into a box containing cold water. A copious flow of water is used to keep the box flooded so as to remove the greater part of the acid. Then the goods travel

through a weak caustic solution to neutralize the last traces of acid and finally through a wash box containing a synthetic detergent.

Rigid Control Necessary

Successful treating of cotton in sulfuric acid at 57° Bé. depends on very careful attention to time, temperature, acid concentration, and tensions. When the balance is disturbed, break-outs, weak fabric, or insufficiently treated fabric result.

The sulfuric acid tends to heat up as the cloth passes through it; so the acid is circulated through a large reserve tank to keep the temperature uniform. When necessary, cooling coils in the system can be put into action.

Acid concentration is automatically controlled by a metering device. A hydrometer installed in the system gives the operator an additional visual check on conditions.

The present treating range provides smooth control of tension that can be varied from box to box to accommodate the changes in the fabric as treatment proceeds. Immersion time is controlled by range speed to suit the particular fabric and finish wanted.

After the acid treatment the wet goods are put through a chainless mercerizer in 55° Tw. caustic. This final chemical treatment improves transparency of the fabrics.

Besides the all-over parchmentization, the bleachery produces a large variety of printed effects by means of acid treatment. Choice of whether the fabric is to be printed with a special acid formula or printed with an acid resist lies mostly in the type of design.

If the design calls for a large parchmentized area with small figures to be left as is, a resist print of the figures is made. Then the goods are run through the Heberlein process, and the resisted areas come through untouched. Opacity in the untreated areas contrasts sharply with the acid-treated portions.

Small over-all patterns designed to be transparent when finished are generally printed on. When this is done, the fabric must be washed quickly after printing to avoid damage.

Plisse Is Overprinted

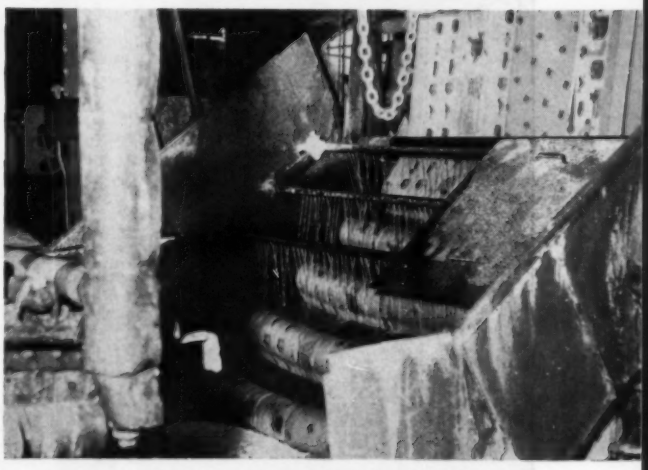
After acid or resist-printing of a design, the cloth can be run through a printing machine again and given a plissé effect with caustic soda. Areas that were acid-treated are not affected, but the untreated areas develop a puckered effect that withstands laundering.

Practically all Heberlein-finished goods are final-framed on swing tenters. This plant has 10 Winsor & Jerauld frames, all with swing attachments. The swinging motion breaks up any fiber intersections that may have become partially fused during the acid treatment, and it breaks down excessive stiffness.

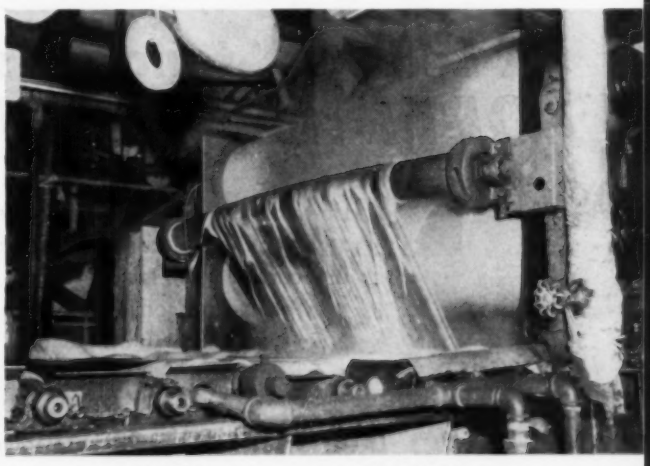
Before final framing, the Heberlein-finished goods are put through a brass and maple roll water mangle and let lay in trucks for a short while. This break in the finishing treatment allows the threads to recover from the mangling and return to the roundness that characterizes well-finished sheers. Intermittent processing of this type has the advantage of added flexibility, although it is generally considered somewhat more expensive than a continuous mangling-tentering setup.

Where customers require a calendered finish, the goods are put through a conventional five-roll calender under moderate pressure to get a somewhat higher glaze and a softer hand.

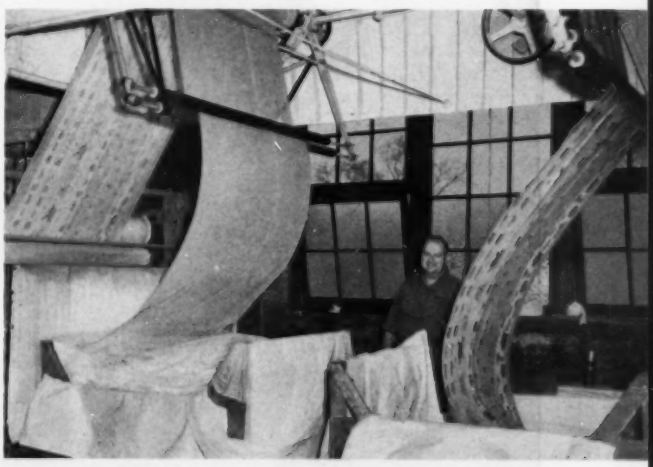
The combination of acid and caustic treatments in over-all or localized designs, plus multicolor printing, produces a number of fabric styles that find ready markets in the dress-goods and drapery fields.



CHAINLESS MERCERIZER is used to remercerize goods that have been acid-treated. Mercerizing caustic at 55° Tw. is sprayed over the previously saturated goods as they pass over the curved iron rolls.



FINAL WASH in a warm detergent solution at the end of the treating range completes the acid-treating portion of the Heberlein process. Most styles are remercerized to get maximum transparency.



DOUBLE STRANDS of cloth are put through the chainless mercerizer whenever possible. Here the washed and neutralized cloth comes off the range ready for mangling and final drying on swing tenter frames.

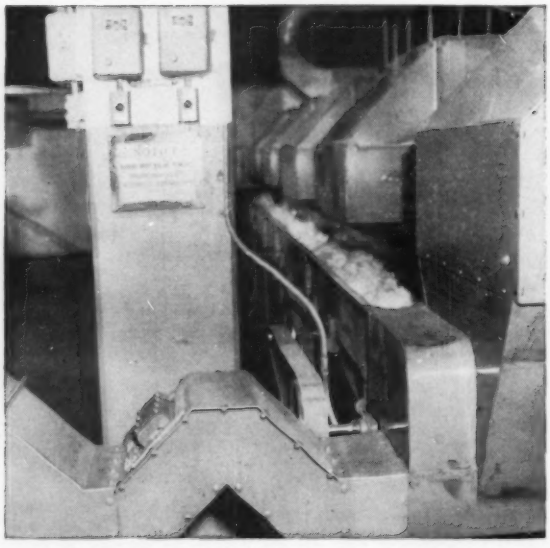
OPENING EQUIPMENT consists of five F-7 feeders that process cotton for combed yarns and five feeders that open cotton for carded yarns.

A Look at Standard's OPENING and PICKING

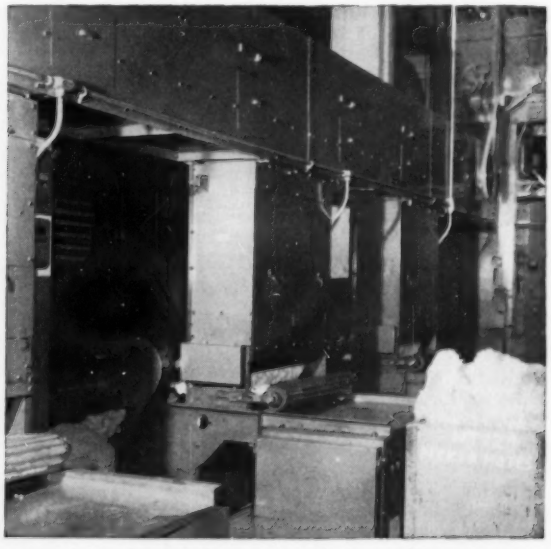
Up-to-date methods and machinery that help four men in Standard Knitting Mills' opening and picking room to turn out top-quality laps for combed and carded yarns include—

- A picker-lap conveyor system
- Regular cleaning schedules
- Efficient machinery layout

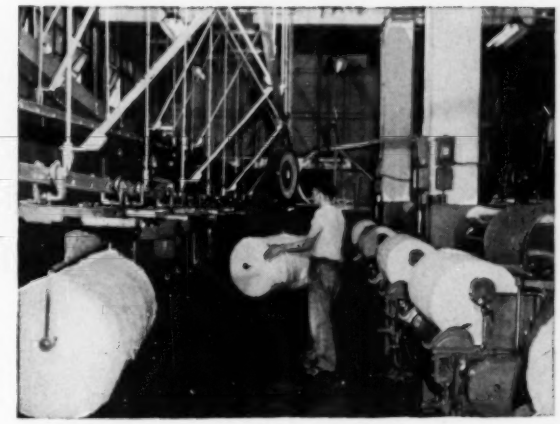
By **JAMES H. BLORE,** Associate Editor, TEXTILE WORLD



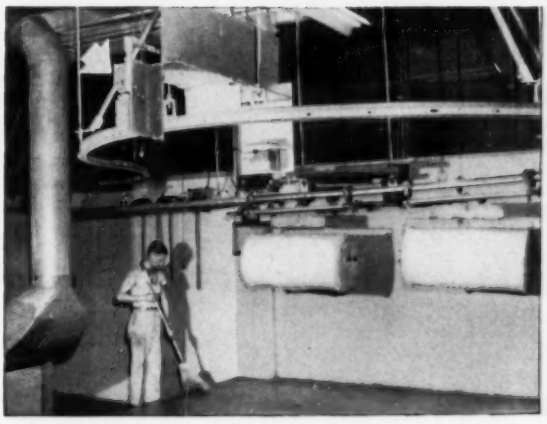
MAGNETS on gooseneck between feed table and vertical opener remove metal trash. Vertical opener is bypassed for synthetics.



PICKERS are fed from feed chutes that can be controlled so that three of the five pickers can work either short or long cotton.



CONVEYOR SYSTEM transports the picker laps from the picker room to the card room 300 yds. away. One train carries four laps.



STORAGE SECTION for picker laps is controlled by electronic eye (arrow) that stops the booster that brings laps from the pickers.

THE OPENING AND PICKING ROOM at Standard Knitting Mills, Inc., Knoxville, Tenn., practically runs itself. One man tends the openers, another the pickers, and another delivers the laps to the card room. There is also one maintenance man.

Modern equipment, including a conveyor system to carry picker laps to the card rooms, enable these men to do their work well. These men also help keep this department one of the cleanest in the mill. Out of eight working hours, one complete hour is used for cleaning while the machinery is shut down.

Standard makes both combed and carded yarns, ranging from 6½s to 30s for its 500 knitting machines. These machines produce fabrics for men's, women's, and children's underwear, shirts, and sleepers.

Picker laps for the two yarns are made in the same room. Combed yarns are made from 1 3/32-in. Strict Middling Delta cotton, and carded yarns are made from full 1-in. Strict Middling Delta cotton.

Machines Are in Line

The machinery is neatly laid out so that all machines are in line, and yet the machinery processing the combed stock is at the west side and the machinery for the shorter staple is at the east side.

There are 27 bales laid out in front of each line of Saco-Lowell F-7 feeders, and another full mix is laid down at one side of the room to bloom while the 27 feeding bales are being used.

Five feeders are used for each line of opening equipment. These feeders are kept replenished according to the red and green lights above the hopper.

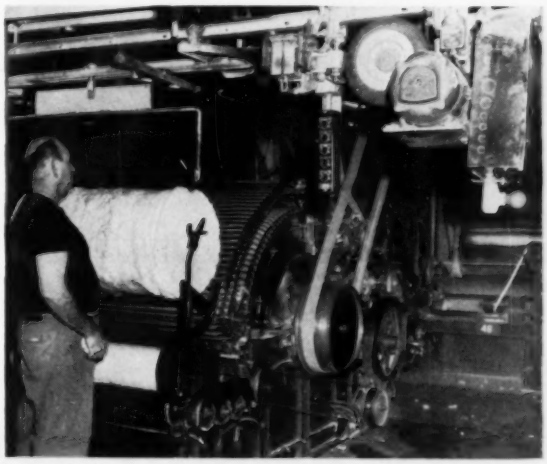
The feeders open the fiber and drop it on a feed table behind the feeders. Each feeder delivers about 180 lbs. of cotton per hour to the feed table. Motes removed in this operation are removed from the feeders each shift. The feed tables deliver the cotton to hoppers at the end of each line nearest the center of the room.

Magnets Remove Metals

A gooseneck duct behind each hopper has two Eriez magnets to remove tramp metal. These magnets, which are cleaned once each shift, have done much to reduce fire hazards and damaged picker rolls.

The cotton then goes through ducts to a vertical opener. The duct work behind the gooseneck is built so that the vertical opener can be bypassed if synthetic fibers or California cotton is run.

A No. 11 condenser and a No. 12 lattice opener follow the vertical opener. Between these two machines is a No. 6 air filter, which is cleaned twice weekly.



AUTOMATIC CARRIER stops at the entrance to the card room, and the lap carriers are unhooked and taken to cards that require laps.

After passing through a second condenser, the long-staple cotton falls into a No. 2 overflow, which delivers it to a third condenser over the picker automatic feed-control system. An extra condenser and a Superior cleaner on the short-staple line of equipment helps clean out most of the remaining foreign matter in this cotton.

Pickers Can Be Switched

Normally, three pickers run on long-staple cotton and two on short-staple cotton. The feed chutes, however, are controlled so that three of the pickers can be switched over to short staple if conditions require it.

The 40-in. laps are made to weigh 57¼ lbs. each. Every lap is weighed, and all laps that weigh out of the ¾-lb. tolerance are reprocessed. Each picker produces about 365 lbs. per hour.

The picker-lap scales run on a track in front of the pickers immediately behind the conveyors that automatically transport the laps to the card room. Laps that are of the correct weight are immediately placed on the conveyor train and carried by gravity to a booster that lifts the lap to a storage section.

CONTINUED ON PAGE 184

CLOTH INSPECTOR J. A. Pierce inspects the cloth on each loom each day with a flashlight.

LOOMFIXER K. L. MUNDY checks a loom flagged by the cloth inspector on his round.

How One Mill Weaves COMBED-YARN FABRICS

• Combed-yarn fabrics are the only fabrics woven at Ivey Weavers. Modern equipment is combined with standard loom practices learned through several years' experience to weave several types of fabrics at 97% production and 1 to 1½% seconds.

By **RICHARD B. PRESSLEY,** Associate Editor, TEXTILE WORLD

Ivey Weavers, Inc., Hickory, N. C., is running 400 Draper X-2 looms on combed-yarn fabrics at 97% efficiency and 1 to 1½% seconds. There are two widths of X-2 looms: 208 40-in. looms run at 186 ppm., and 192 46-in. looms run at 172 ppm.

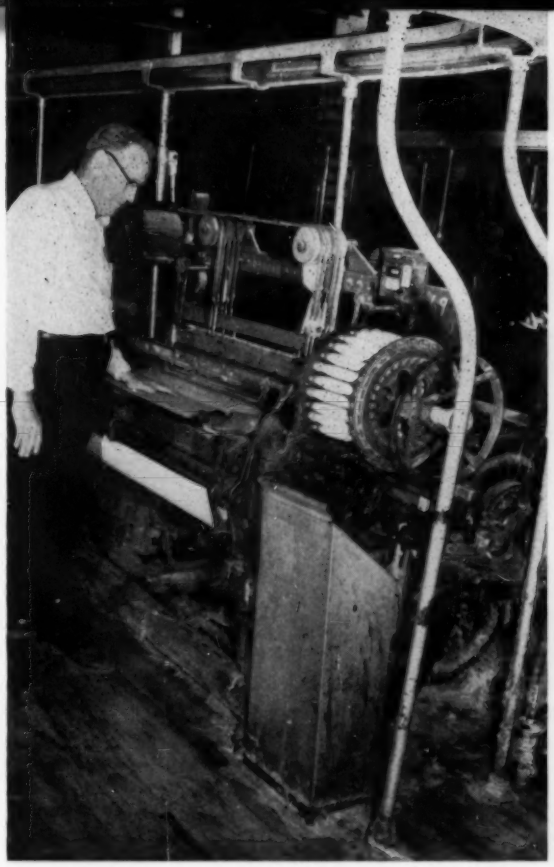
All fabrics woven are combed cotton and include dress goods, draperies, women's blouse goods, handkerchiefs, government twills and balloon fabrics, and fabrics to be rubber coated. Typical fabrics are lawns: 40-in., 88x80, 6.90; 39-in., 96x100, 5.00; and 39-in., 96x100, 4.10. Sateens include 39-in., 96x160, 3.35; 38½-in., 84x136, 4.25; and 40-in., 80x88, 5.00.

Warp yarns are 40s, 50s, and 60s. Filling yarns range from 18s to 63s.

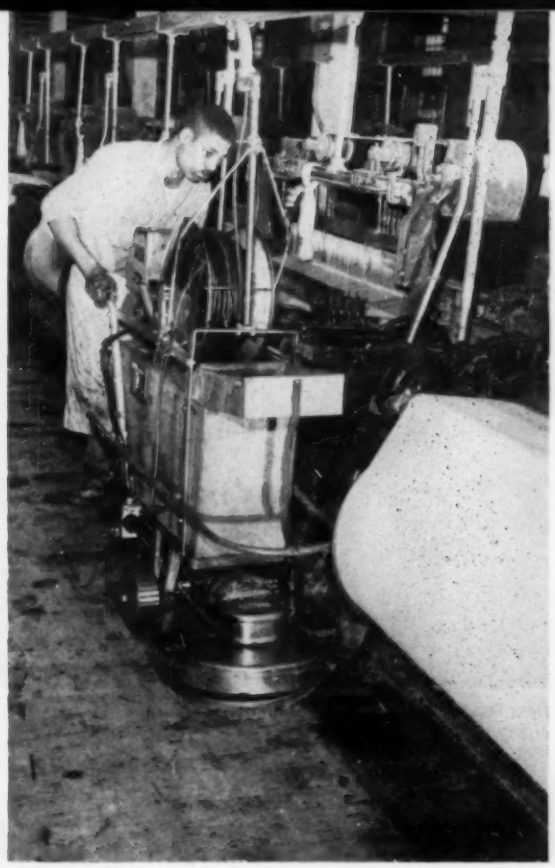
What Makes the Looms Run?

Superintendent Howard J. Spry credits the high efficiency of the job to the fact that: "We have good looms and good auxiliary equipment. Take, for example, the overhead loom cleaners installed in 1952; we're getting excellent results from them. The drop wires are always completely free of lint. Weavers have to wipe the handrails only to keep the looms operating free from lint that disturbs weaving.

"An air-changing system has also done much to improve



SHIFT OVERSEER C. O. BEECH spends a lot of time in weavers' alleys checking cloth.



MAINTENANCE CREW cleans the entire floor with a Finnell machine once each week.

cloth quality and efficiency.

"All loom settings are made by Draper Corp. instruction sheets or by our own special settings. We measure the pressure on all binder springs when they're set to be sure all binders have the same tension. By setting looms to standards, we're able to keep our seconds low and our production high."

How the Looms Are Rigged

The looms are all in one weave room and are mounted on a hardwood floor with lag screws. The ends of the looms are 4 ins. apart. Every third loom has a 14-in. passageway for loomfixers and weavers.

The looms have double-fork filling stop motions, sliding-bar warp stop motions, Stafford thread cutters, dry-disk clutches, Bartlett let-offs, clock-spring-top harness motions, and slotted checkstraps; and most looms have auxiliary selvage harness motions.

The looms are driven by 1-hp. motors operated on 550 v. at 1,710 or 1,745 rpm. About half the motors have sealed bearings, and the others have sleeve bearings.

Here's the Employee Layout

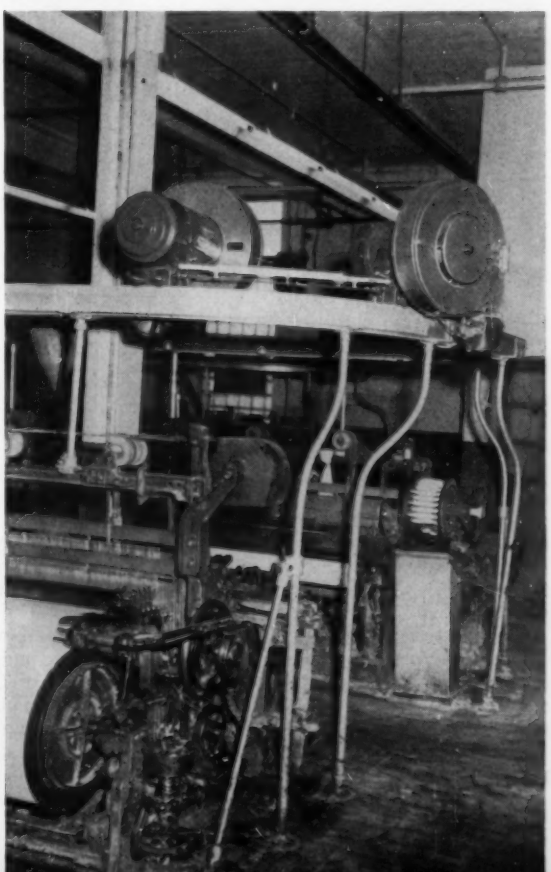
There are nine weavers on the 400 looms; weavers operate 54, 45, and 37 looms according to cloth styles. Each loomfixer has 100 looms. Five batteryhands have 67 looms each, and one batteryhand has 65 looms.

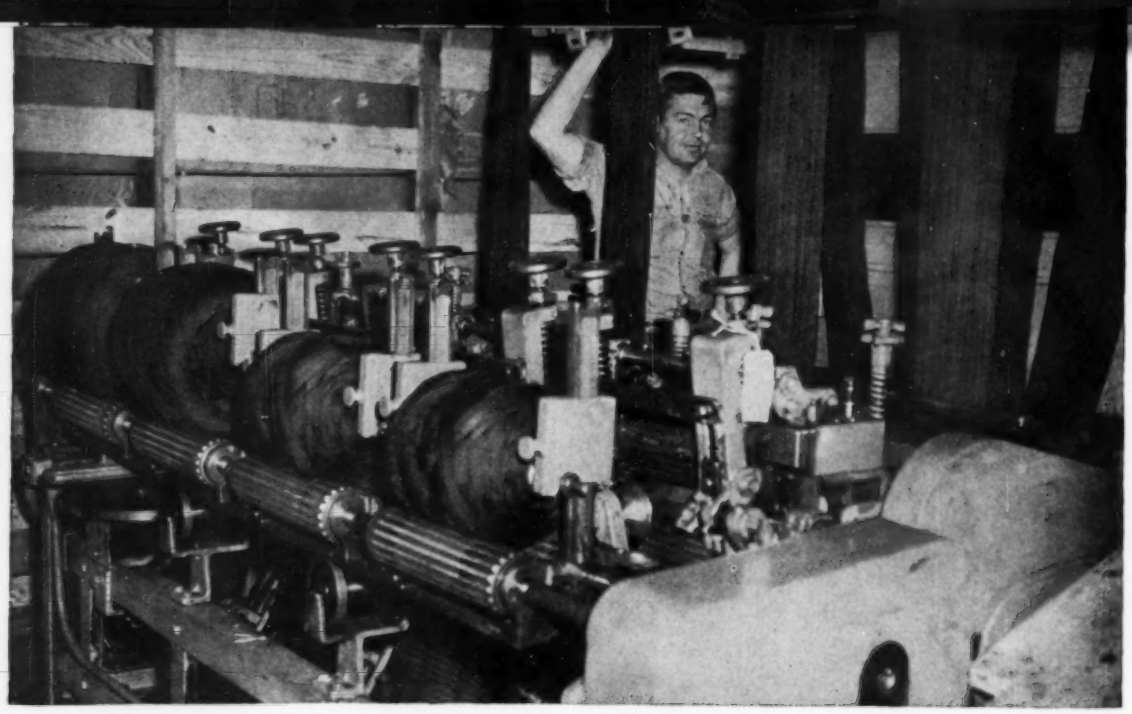
There's also a cloth inspector on the first shift. He inspects the cloth on the loom each day for misdraws, temple marks, and other defects. He uses a flashlight to make the inspection.

Batteryhands use both filling carts and aprons to fill batteries. Where a lot of looms together have the same cloth styles, carts are used; where styles are scattered on a

CONTINUED ON PAGE 182

PARKS-CRAMER loom cleaners clean all looms constantly. The cleaner makes 9-min. rounds.





FIRST BLENDING of dyed top comes at the end of the drying operation. Here a four-head intersecting gill box reballs the top as it comes from the dryer.

How Model Dye Works Dyes WOOL TOP

Model Dye Work's brand-new plant at Sumter, S. C., is just completing its shakedown period. Located near two large wool-scouring plants, the new dyehouse can offer customers quick delivery of dyed top. The plant is equipped for—

- **Dyeing**
- **Vigoureux printing**
- **Blending and finishing**
- **Recombing**

By ROBERT W. PINAULT, Assistant Editor, TEXTILE WORLD

MODEL DYE WORKS at Sumter, S. C., is now approaching its scheduled capacity of 60,000 to 75,000 lbs. of dyed top per week. Taking advantage of plenty of room and a chance to start from the ground up, the management laid out a one-story plant through which the wool tops flow smoothly during processing.

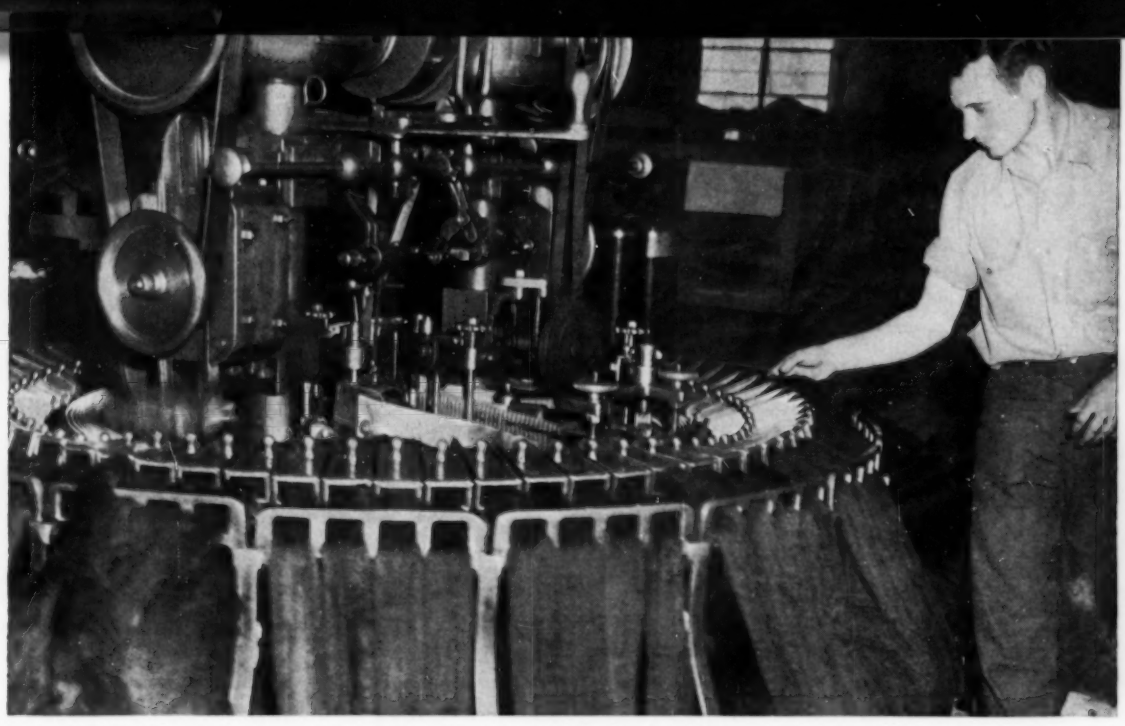
Model is a commission dyehouse and receives wool top from scouring and combing plants as ordered out by the customers. The plant warehouse area can store up to 150,000 lbs. of raw wool top.

Wool top as received is first opened up enough in the center to receive the spindles of the dyeing machines. Then a knitted bag is slipped over the top, and it is ready to be loaded into the dyeing machine.

Model uses Riggs & Lombard rectangular dyeing machines, the larger ones carrying up to 1,500 lbs. of top at one load. The tops are placed on perforated spindles, seven to eight tops to a spindle; and a cover is pressed onto the top of the stack to make a snug package. The perforated spindles are all connected with a circulating pump that forces the dye liquor through the packages from inside out.

How Top Is Dyed

When the machine is loaded, it is filled with warm water at 110° F. to give a bath ratio of about 1 to 20 and the pump is started to circulate the water through the tops so that they are thoroughly wet out. When acid dyes are to be used, the color is added to the machine, the temperature is raised over a period of 60 mins. to 212° F., the load is let boil for 60 mins., and the shade is checked.



RECOMBING is required by some customers to remove noilage. The combing operation also serves to blend the colors of the top.

A chrome-dye routine is similar in that 1 hr. is allowed to bring the dyebath to 212° F. Acetic acid is added after the wool has been at the boil for 30 mins., and the shade and bath condition are checked 30 mins. later.

Then sodium bichromate is added and the dyebath brought up to 212° F. and kept there for 30 mins. Blacks may require 45 to 60 mins. to develop the shade fully. A rinse bath follows,

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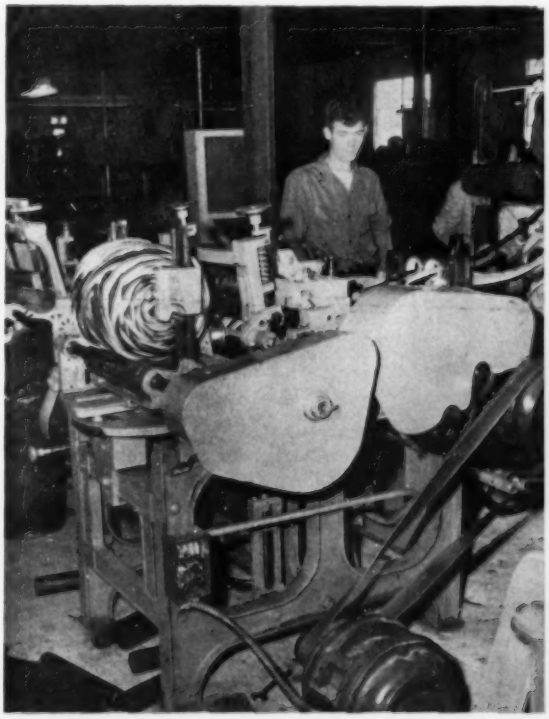
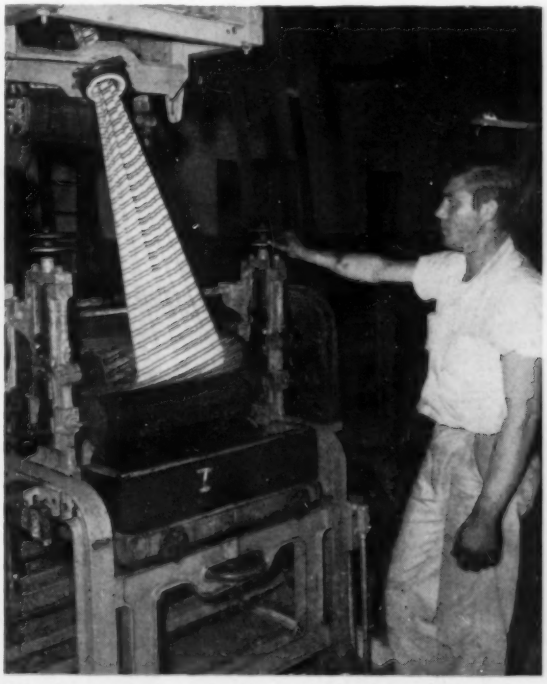
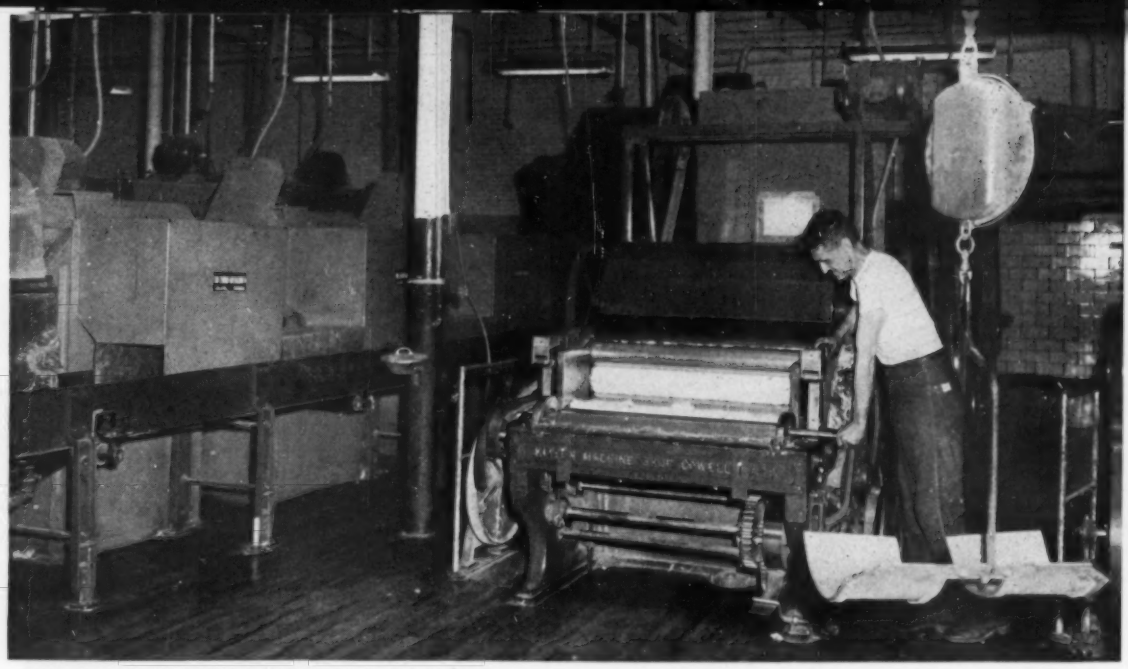


FIRST MIXING of different-colored tops that will end up as a blend of evenly mixed color starts on the first line of gill boxes.



VIGOUREUX PRINTING impresses stripes of color on wool sliver, which is later put in a steamer where the color is developed and fixed by steaming. Blending operations convert the striped sliver into a smooth blend of colored and white top.



COTTON OPENING AND PICKING EQUIPMENT, located in the same room, is operated by one man.

How Cartex Cards COTTON and NYLON

- Some mills card both cotton and nylon on the same machinery; but Cartex Mills Div., Carlton Yarn Mills, Salisbury, N. C., believes in keeping the fibers separate.
- Here's how the mill prepares stock for spinning—

By **WILLIAM G. ASHMORE,** Associate Editor, TEXTILE WORLD

Cartex Mills Div., Carlton Yarn Mills, Salisbury, N. C., specializes in the manufacture of 19s to 100s combed cotton yarn for lace, sewing thread, embroidery thread, and Simplex knitting. In addition, the mill spins some nylon yarn.

To make high-grade combed yarns, some for brass-bobbin lace, good cotton and good carding are essential. Cottons used are 1¼-in. Peeler and 1¼-in. Karnak, of the best grades available. Here's how Cartex cards these cottons.

Opening and picking equipment is located in the same room and operated by one man. Production is about 700 lbs. per hr. Motes and fly removed by the two operations average 4%.

Feeding is from 20 bales.

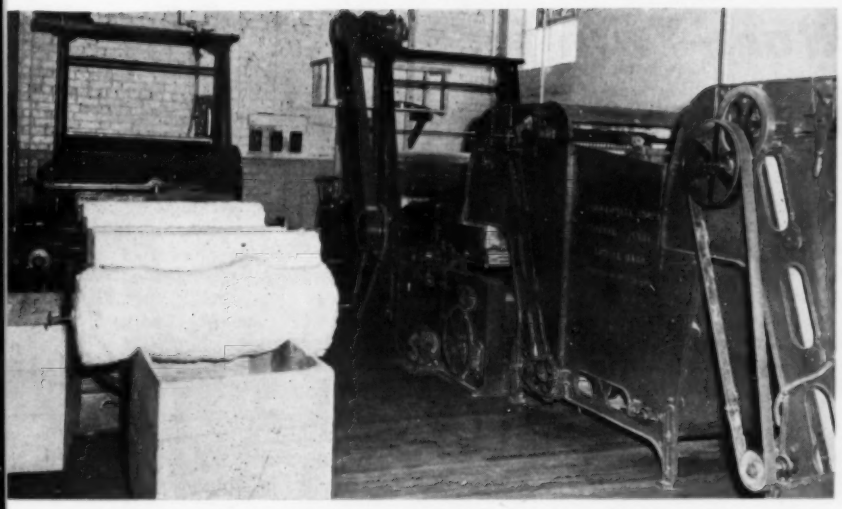
The single compact line of opening machinery consists of three Whitin hoppers attached to Centrif Junior cleaners, a feed apron, and two Superior cleaners in tandem.

A conveyor transports the stock from the last cleaner to the back of a two-process, three-beater picker equipped with blending reserve. All beaters run 700 rpm. A 53-yd., 12-oz. lap is produced every 7 mins.

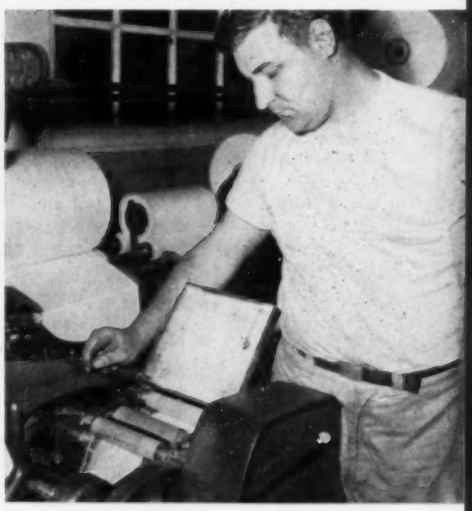
In the card room, there are 105 Whitin belt-driven cards, equipped with Abington strippers, producing a 41-grain sliver at 3½ to 5 lbs. per hr. The cards could run faster, according to the mill, but additional production is not needed at present.

Waste Averages 4½%

Cylinder speed is 165 rpm., lickerin 330 rpm., and doffer 5 rpm.; settings are standard. Fly and strip waste together average 4½%. From



NYLON OPENING AND PICKING, along with other carding operations, are in a separate building.



COMBERS, running 90 nips per minute, have been converted to three-over-four draw boxes.

7 to 10 lbs. of sliver are put in 12-in. cans.

Combing preparation consists of five sliver lappers, 20-ends-up, followed by four ribbon lappers, four-ends-up. A 475-grain lap is produced at 150 lbs. per hr. by each sliver lapper; a 550-grain lap is made at 150 lbs. per hr. by each ribbon lapper.

Next in line are 30 Naismith six-lap combers that have been converted from four-over-four to three-over-four draw boxes. The new draw boxes reduced variation from 28 to 22%.

The combers, producing a 48-grain sliver at 11 lbs. per hr., operate at 90 nips per minute. Noils average 16%.

Whitin breaker and finisher drawing operates at 95 ft. per min. There are 24 deliveries of each, six-ends-up, producing a 60-grain sliver with a draft of 6. Variation averages 17%. The entire department is operated by one man.

Cartex formerly had four processes of roving, but the small-package slubbers and jack frames were eliminated when long-draft spinning was installed. The new roving organization consists of five Whitin Inter-Draft 10x5 frames and 12 Whitin 8x4 conventional-draft frames.

The 112-spindle 10x5 frames produce 1.2- to 1.85-hk. roving. Front-roll speed is 140 rpm., spindle speed 900 rpm., back draft 3, and front draft 3. A bobbin of 1.25-hk. roving weighs 1¾ lbs.

The 8x4 frames produce 3- to 6-hk. roving on a 12- to 18-oz. bobbin. Draft ranges from 5.5 to 6.5. For example, 4-hk. roving has a draft of 6.15, and a bobbin weighs 1 lb.

Although Cartex is primarily and

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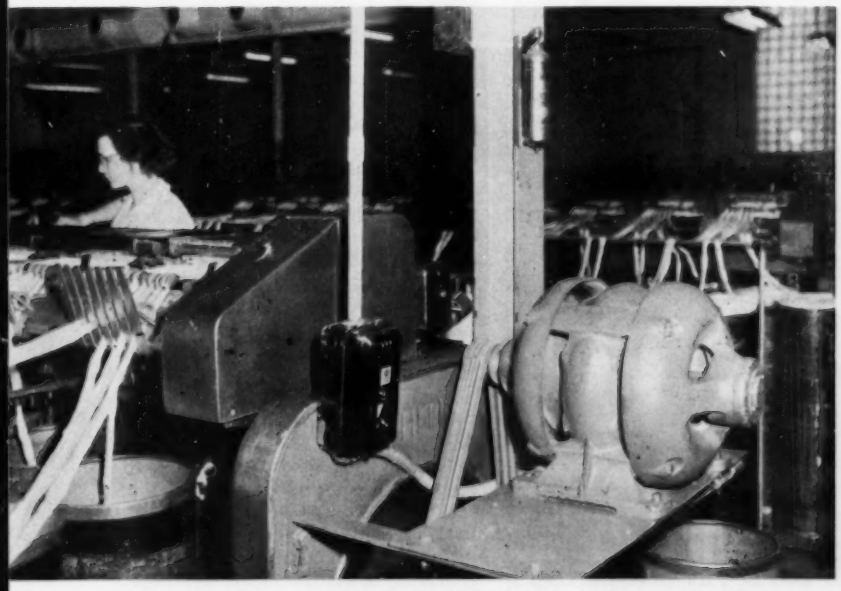

DRAWING-FRAME MOTORS are raised above the floor to facilitate cleaning.

ROVING has been reduced from four to two processes.

How To Check Warp Yarn for Short-Term TWIST VARIATION

- Faulty spindles cause a loss of twist in yarn when the spinning frame stops and starts. The resulting soft yarn can cause trouble all the way through weaving.
- Here's a simple method of testing for faulty spindles and some pointers on handling yarn defects that cause bad packages.

By JACK ALLAN

WARP-YARN QUALITY largely determines fabric quality. Loom efficiency, a prime factor in cost and profit, also is affected by warp-yarn quality.

All spinners hope for maximum-quality yarn; yet they very often overlook practical, realistic spinning techniques that can improve yarn quality. These techniques represent targets easily within range of the average spinner.

The production of good yarn packages is one of the biggest guns the spinner has to shoot at those 0.2% improvements in loom efficiency that often spell the difference between profit and loss. To hit such targets, the spinner must become a precisionist in small variations.

There are few mills that visualize clearly the full effects of small defects produced by faulty twist components, hereafter described as twist defects. Yet twist greatly affects the preparation of a good package for weaving. Twist is the packaging element that holds the fiber strand together, and it is a primary source of small variations that can destroy warp quality.

Twist defects are caused by slack maintenance and cleaning around spindles, idlers, and tapes. Lint accumulations become chokes on spindles and idlers. Excessive lint adheres in a solid sheet to the underside of unclean tapes and renders them unfit for precise twisting action. Maximum twist efficiency cannot be obtained under such conditions.

Defects Cut Profits

Obvious defects, such as soft bobbins and tangled yarn, are easily detected and controlled. It is the small twist variations that get into the warp yarn undetected and kill that 0.2% margin of profit in loom efficiency. What are these defects and how can you find them by testing? Normal twist tests are of little value in determining such defects.

As long as a dirty, choked, or faulty spindle is running at its maximum speed, any extra resistance it may have is hidden by the momentum of the spindle. Therefore, bobbins selected from a normally running frame probably will not show a very significant variation. But when you check bobbins by the "stop-start-stop" method, you will find definite twist variations occurring all over your spinning room.

How does friction on the spindle show up in the stop-start-stop test? The answer is that when you stop a frame with a faulty spindle, the extra friction on that spindle causes it to stop slightly earlier than the good spindles on the frame. Then when you start the frame, the excess friction on spindle, idler, or tape does not allow the spindle to start as quickly as the good spindles. The delayed spindle action reduces twist at each stop and start.

If you count the number of stops and starts on your machinery occurring in an hour, you can gauge the importance of removing all possible friction.

Variations Are Large

To check for this defect, stop a frame with the bobbin about two-thirds full; start and run the frame 10 to 15 secs. and then quickly shut it down. Test the length of yarn produced during this stop-start-stop period.

You will probably find twist variations on faulty spindles as large or larger than those shown in the accompanying table. The tabulation, based on actual mill tests, shows a loss of 3.20 tpi. on 16s warp caused by a choked spindle. The stop-start-stop yarn has a twist multiplier of 3.70, almost a filling twist, whereas other yarn from the same spindle under normal test procedure checks close to the standard warp-twist multiplier of 4.50.

Similar twist defects are produced by slack, improperly cut, and badly sewed tapes and by choked idlers. Rigid schedules of cleaning, oiling, and maintenance help control twist as a packaging agent for top-quality weaving yarn.

Twist-Defects Test
(16s warp yarn)

Cause of defect	Tpi. at point of defect	Standard tpi.	Tpi. loss	Twist multiplier at point of defect	Standard twist multiplier
Slack tape	15.27	18.00	2.73	3.82	4.50
Lint-imbedded tape	15.60	18.00	2.40	3.90	4.50
Poorly sewed tape	15.20	18.00	2.60	3.80	4.50
Choked spindle	14.80	18.00	3.20	3.70	4.50
Choke on idler	15.70	18.00	2.30	3.93	4.50

THE STOP-START-STOP TEST METHOD shows that there is a significant loss of yarn twist between the two stopping points of a faulty spindle. The twist multiplier is reduced proportionately in this length of yarn.

One mill precuts tapes and tints the sewing thread a different color for each shift so that poor sewing or tape workmanship can be traced to the shift responsible. This mill has little to fear from twist defects caused by bad tapes.

Package defects caused by high bobbins are rare on newer spindle assemblies and frames. However, they still occur occasionally. Bobbins that set high on the spindle cause the yarn to be wound too far down on the bobbin base. This defect results in almost total losses. And even when high bobbins are runnable, they require so many knots at the spooler that the resulting yarn is of poor quality.

High bobbins are caused by dirty spindles or lint-choked bobbins. To control this problem, pick the spindles and clean out all yarn boxes, bobbins, spooler troughs, and bobbin-conveyor belts.

Short Doffs Add Knots

Short doffs increase the possibilities of defects in spooling because more knots have to be tied in the yarn. The extra knots may mean more slipknots and other packaging errors.

Short doffs are partly the fault of management. Usually, the doffer either is poorly trained or has too many frames or too wide a variety of yarn numbers and styles on his set. His job should be rearranged so that he has less machine interference from number variations, or he should be instructed to run bobbins full regardless of machine interference.

If these corrections do not apply, he should have a reduced set or be teamed with another doffer to facilitate proper doff sequence. Short doffing should be outlawed for yarn going into top-quality warps.

Some doffers do not tie down the end of the yarn on the bare bobbin when they start a frame. If the starting end of the bobbin becomes loose at the spooler, wild yarn may occur to ruin otherwise good yarn.

Doffers should be trained to tie down warp ends properly, or tying equipment should be added to the builder mechanism. Finally, doffers and other spinning help should be given full information as to how their work affects spooling, warping, slashing, and weaving.

Slipknots, wild yarn, tight cheeses, and lost ends are typical defects that cause bad packages in spooling and warping.

Slipknots are usually blamed on faulty knotters on automatic spoolers, but the spooler is not always at fault. For example, if spinners follow up the twist variations discovered by the stop-start-stop test method, they may find many weak places that break or fail to hold in the area of yarn adjacent to knots. These faults, for lack of a better definition, are usually called slipknots, although they actually are something else.

Wild Yarn Is Harmful

Wild yarn is the term used to describe defects that result from flying ends or broken bits of yarn during spooling. Tangled cheeses may be caused by wild yarn. There is very little the spooler-room operator can do to eliminate the trouble except to keep the machinery clean.

Tight cheeses are caused by chokes of lint on the cheese cores that prevent free turning. These cheeses run tight at the warper creel, and the ends cause a characteristic "valley" on the surface of the warper beam. Tight cheeses also are caused by careless painting of core ends for yarn-identification purposes. If the paint gets on the core proper, lint sticks to it and a tight-running cheese is the result.

Lost ends are caused by yarn breaks on warper or slasher beams that cannot be found; the ends become lost in the layers of yarn. Lost ends, like crossed ends, are among the most serious defects that the warper can pass on to the slasher. The trouble may be caused by warper-hand carelessness, mechanical conditions, or stop-motion failure at the warper creel.

Faulty clutch disks on warper brakes are a common cause of lost ends; they fail to react fast enough in stopping to prevent a broken end from being hopelessly covered up by adjacent ends. Lost ends also can be caused by failure of the operator to turn the beam back until broken ends are recovered and tied securely.

Spooler defects can be greatly reduced by using proper snickplate settings and standard drum speeds and by carefully cleaning cheese cores and spooler parts. Proper maintenance of spooler knotters is important also. Every spooler room should have an extra knotter in perfect operating condition and plenty of spare parts. The parts should be under control of the second hand.

Check Yarn at the Warper

Warping is the spinner's last chance to build warp-yarn quality for slashing and weaving. This department is the final inspection point for spinning. Here, warper operators should learn how important their work is in slashing and weaving. They should be told when they're doing a good job as well as when they're doing a bad job.

The warper must prepare an even sheet of yarn free from defects and evenly spaced by the expansion comb. The yarn must be correctly yarded and

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Humanics — A TW Brief

Don't Defer Explanations

Sid Latham, weaving second hand, received a complaint from the spinning department about slow and irregular deliveries of empty quills. Sid was reasonably sure that his quill man was pushing boxes of quills to the elevator at regular intervals and that the elevator operator, a spinning-room employee, was the one at fault.

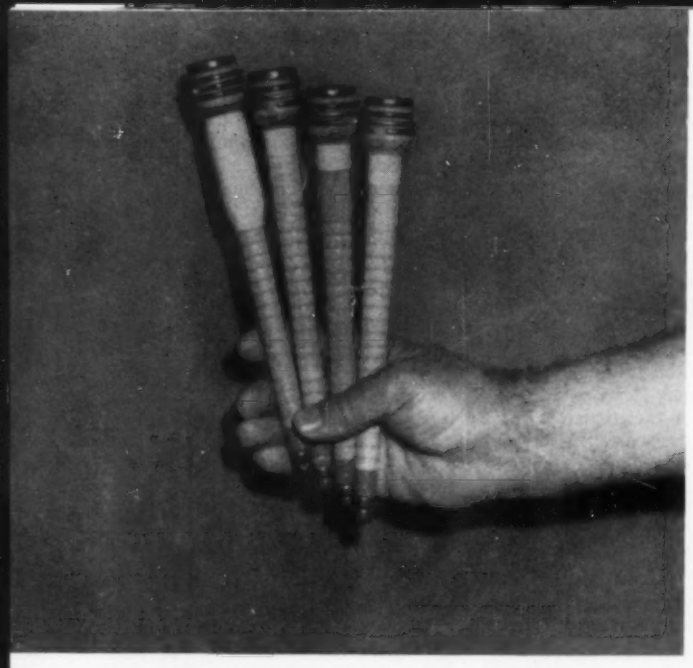
To enable him to get to the root of the trouble, Sid gave the quill man a notebook and pencil with instructions to make a record of the time he delivered each box of quills to the elevator.

About two hours later the quill man came to Sid and announced that he was quitting. Asked for a reason, he said:

"I've worked for a lot of different bosses, but you're the first one that's made me keep my own time. I won't work for anyone who don't trust me to keep my job running!"

Vainly, Sid tried to explain that he was not checking on the quill man's work but was endeavoring to prove to the spinning supervisor that the fault was not in the weave room.

The quill man remained unconvinced and left the mill, but Sid learned a lesson. From then on, he took the employees concerned into his confidence and explained reasons for any changes in plans and procedures before they were put into effect.



BUNCHES of uneven yardage cause waste of filling yarn.

To Save Money on WEAVING Waste—

Weaving waste is present in—

- Materials
- Supplies
- Labor
- Cloth

For effective control, each type of waste must be recognized as such and preventive measures taken for each individual problem.

By WILMER C. WESTBROOK, Assistant Editor, TEXTILE WORLD

WASTE IN WEAVING is a serious matter. If not controlled, the various items that can be classified as waste will put the weaving department in the red. Waste in weaving can be loosely grouped in these four classes:

1. Material waste
2. Cloth waste
3. Supply waste
4. Labor waste

The waste of material is a major source of loss and includes defective or damaged yarn, filling yarn left on bobbins, unused warp yarn at warp-outs, and yarn wasted through careless handling.

Defective yarn and some of the damaged yarn cannot be attributed to the weaving department. However, when any unusable yarn is received, it should be returned as promptly as possible with enough information so that the department responsible can take corrective measures.

1. Yarn Waste

— Handling

Much yarn, both on bobbin and on beams, is damaged in the weave room by careless handling.

A bobbin that is dropped on the floor and becomes soiled or damaged may seem a very small matter; but a bobbin contains roughly 2 oz. of filling yarn, and that would be about 4¢ worth of cotton. Take the hundreds of bobbins that are dropped or thrown to the floor every day, many times with damage to the bobbin as well as the yarn, and this waste adds up to a tidy sum.

— Filling Bunch

Usually, about enough yarn for six picks or three round trips of the shuttle, is used for the bunch on the bobbin. Thus, for 36-in. cloth the bunch should contain 6 yds. of yarn to insure adequate pickage during the operation of the filling-changing mechanism.

If the length of the yarn in the bunch is cut down too short, the increased seconds and downtime caused by exhausted yarn will more than offset any savings. But having just 1 yd. too much on each bobbin amounts to a lot of waste.

As an example, take 1,000 looms operating at a standard work week of 120 hrs. and each bobbin running 5 mins. in the loom. The extra 1 yd. per bobbin amounts to almost 1.5-million yds. of yarn a week.

— Slashing

It is impossible to eliminate all the warp yarn waste at warp-out; and since some waste is unavoidable, sometimes all this waste is taken for granted. Some yarn waste can be prevented in the slasher room by starting the yarn straight on the beam and fastening it securely. Beams that contain yarn that cannot be used because of slasher breakouts, yarn slipping on the beam, ends started with uneven tension, etc., should all be shown to the person in the slasher room responsible for the shoddy work.

— Tying in

Much warp yarn is wasted when a full warp is placed in the loom and the pattern tied to it. Sometimes it is necessary, because of rough handling or insecurely taped yarn, to unwind several layers of the yarn from the beam to get a straight lease for the tying-in machine. Then, too, the tying-in machine operator can waste a lot of yarn in the way he trims it in preparation for the knotter.

Take 1,000 looms weaving a fabric that requires a new warp every 10 days. If there are 4,000 ends per warp and 1 yd. is wasted per warp-out, there will be 2-million yds. of warp-yarn waste per week from this cause alone.

— Carelessness

Careless handling results in a lot of materials waste in addition to causes already listed. When yarn is mixed, it is sometimes more economical to discard it rather than go to the trouble and expense of separating it and running the risk of some of it getting in the cloth and causing off-goods.

Much yarn is damaged by careless workers in the weave room. Filling may be dumped in a dirty box or one having splinters or rough edges that cut the yarn. Warps may be damaged by boxes or trucks being pushed against them. A loomfixer may remove bobbins from a battery without first wiping the oil from his hands, or he may soil or damage warp yarn by reaching through it to repair parts underneath the loom. Cleaners may blow or rub dirt and grease on the yarn. Weavers and batteryhands cause yarn damage through carelessness.

2. Cloth Waste

— Off-Goods

The most glaring example of cloth waste is second-quality cloth. It costs just as much to produce a yard of off-goods as it does to produce a yard of

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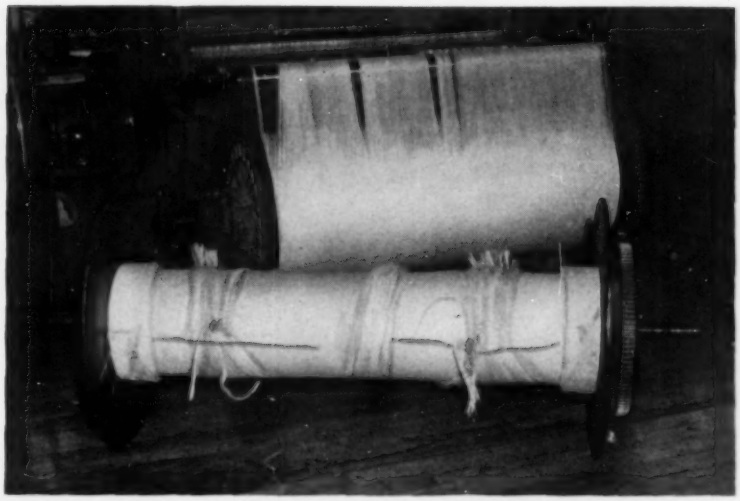
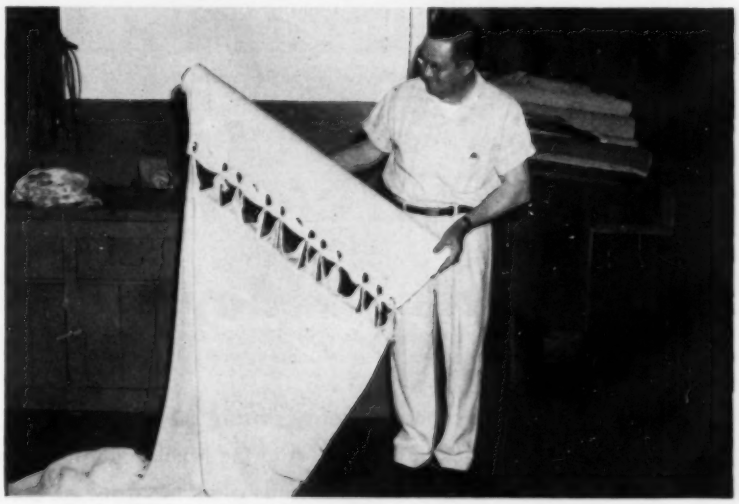
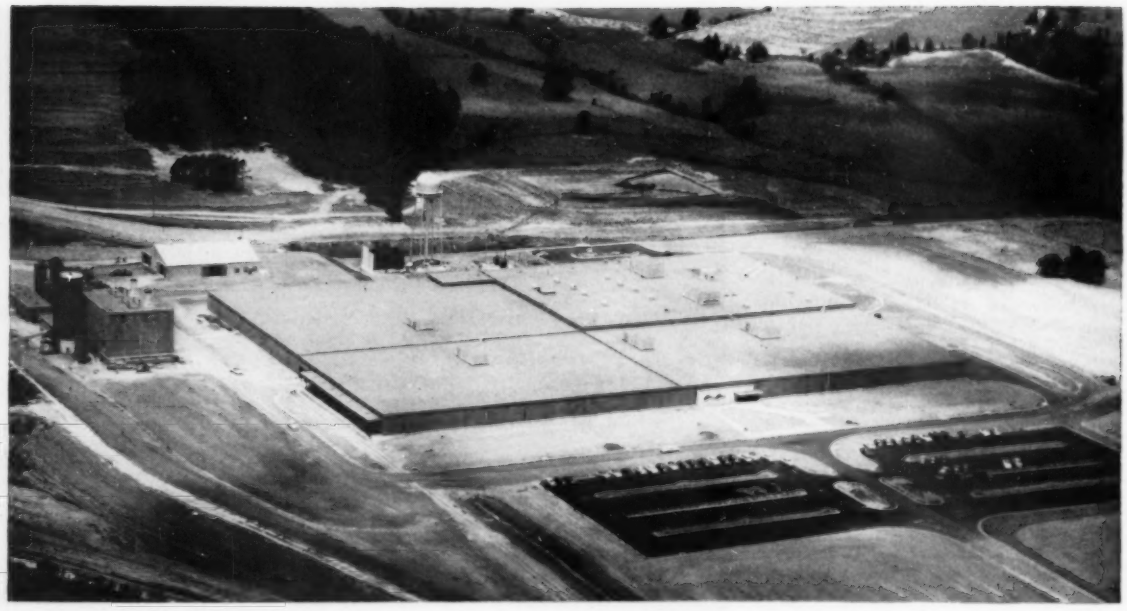


BEAMS out of lease or damaged are a source of waste



CLOTH is wasted at warp-out if not doffed correctly.

RAGS such as this can be used for cleaning instead of wasting good cloth.



PRECAST CONCRETE SLABS cover the entire plant of Coats & Clark and involve approximately 280,000 sq. ft.

Precast CONCRETE ROOFS Are the Trend Today

• Precast concrete roof decks are 50 years old. But they have just caught on in the past 10 years. And the textile industry is the second largest user. Here's how one modern textile plant has gone all out for the roof.

By **RICHARD B. PRESSLEY,** Associate Editor, TEXTILE WORLD

COATS & CLARK, INC.'s yarn- and thread-finishing plant, Toccoa, Ga., is one of 160 textile mill buildings that have been built with precast concrete roof decks during the past 10 years. The installation at Coats & Clark shows the roofing trend of the entire textile industry.

A recent survey made by Eden & Associates shows that 8,300,000 sq. ft. of this roof deck have been installed in the textile industry. The average size of precast concrete roof-deck installations was the second largest of all manufacturing plants. Of the 160 installations, the average was more than 50,000 sq. ft.

The roof at Coats & Clark was completed Oct. 1, 1953, and involved approximately 280,000 sq. ft. The main mill is 440x620 ft.; the boiler house is 75x60 ft.; and the caustic-recovery building is 60x60 ft. The reasons the engineers, J. E. Sirrine Co., specified precast concrete decks are: (1) ready availability; (2) speed of installation; (3) reduced maintenance; (4) fire resistance; (5) durability; and (6) there's no swelling, warping, or twisting.

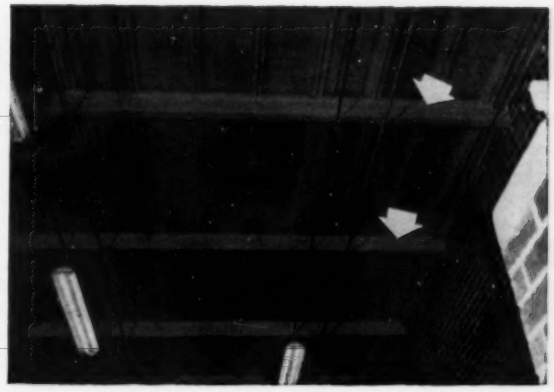
The cost of the precast-concrete slabs laid on the Coats & Clark building, including metal clips and mastic, was $0.4361 per sq. ft. Special costs were added, such as $4.00 per opening and $8.00 for an opening larger than one slab. The present cost would be approximately 10% higher.

Standard Slabs Are Used

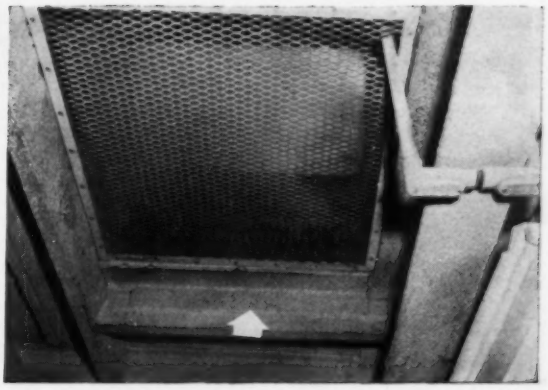
The slabs were fabricated by Federal Specifications SS-R-531. They are channel-shaped, 8 ft. long and 2 ft. wide, standard 3½-in. slabs.

Special-size slabs were made to fit the frame openings for air-conditioning vents, pipes, and other purposes. The flanges of the channel slabs are not cut at any opening.

The weight of the slabs is not more than 18 lbs. per sq. ft. of roof surface. The slabs were tested to support a

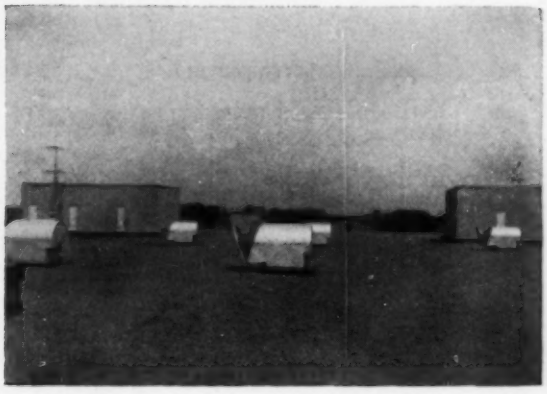


I-BEAM purlins (arrows) for slabs are spaced 8 ft. apart. The ends of the slabs rest directly on the purlins.



OPENINGS IN ROOFS are reinforced with bridgework (arrow) all around each opening. New openings can be cut also.

OPENINGS ON ROOFS for air-conditioning ducts are flashed (arrow) just as common roofs are constructed.



OVER-ALL ROOF is completely smooth. Maintenance men for air-conditioning penthouses walk on the roof without injuring it.

load of 250 lbs. per sq. ft. of roof surface.

The web of the slab is reinforced with galvanized welded wire mesh and is not less than 1 in. thick (wet thickness). Each 3½-in.-thick leg is reinforced with one deformed galvanized reinforced bar accurately centered so that the bar is covered with not less than ½ in. of dense impervious concrete on all sides.

The reinforced concrete consists of portland cement, mineral aggregates, and water. The materials were mixed, placed, reinforced, and cured by specification SS-R-531.

The aggregate is sand and hard, dense crushed stone similar to granite and does not contain any slag or limestone aggregate.

How Slabs Are Laid

The ends of the 8-ft. concrete slabs are laid directly on 10-in., 17-lb. I-beam purlins. The slabs are anchored at the ends to the purlins with metal clips for protection against windstorms. Special anchors are used at the walls and openings.

The upper portion only of the joints of the slabs is filled with an asphalt-base mastic cement with a melting point not less than 225° F. The cement is guaranteed not to drip.

After the joints of the slabs were filled with a mastic cement, a 4-in.-wide strip of 15-lb. roofing felt was cemented over each joint with the mastic cement used to fill the joints between the slabs. The felt was put on immediately after the joints were filled so that it was part of the same operation. The finished deck was a smooth surface ready for the application of the roof.

A four-ply felt vapor seal was applied directly over the concrete-slab deck. Then 2 ins. of Fiberglas insulation was put over the felt vapor seal.

A five-ply 20-year-bonded tar-and-gravel Ruberoid roof was put over the Fiberglas insulation.

Slabs Form the Ceiling

The concrete slabs are exposed overhead throughout the mill proper, but the ceilings are finished in the offices. The slabs are not painted in production areas. But they are painted in three areas: the color-mixing room, laboratory, and drug room. Prufcoat acid-and-alkali-resistant paint is used in the mixing room, and Barreled Sunlight A & A is used in the laboratory and drug rooms.

The roof is inspected periodically, but no maintenance has been necessary during the 2½ years since installation.

The only disadvantage of the precast concrete roof deck at Coats & Clark, according to L. P. Greer, Jr., chief engineer, is: "You have to be sure all roof openings are properly located and supported. But you can cut holes with an electric saw with a masonry blade. Then it is necessary to frame the opening with structural members between the standard purlins."

With the usual installation of precast concrete deck, there is reduced insurance cost. But since Coats & Clark has a complete sprinkler system, it is in the lowest insurance-cost bracket without the help of the concrete deck.

Stop QUALITY DEFECTS At Their Source

Defects in cloth that start in the preparatory processes can be stopped at their source by proper supervision and instruction. Such defects are caused by—

- **Whip-overs**
- **Flyer waste**
- **Singlings**
- **Hard piecings**

By MARCUS C. GROSS

DEFECTS IN STOCK in process that appear minor at the source are multiplied by the various drafting operations until they become defects of major proportions in the finished cloth. Most of these defects are entirely unwarranted and unnecessary, and only a constant and continuing program of top supervision and instruction can overcome and correct them.

Quality cannot be achieved until all employees know what is expected of them. The supervisor should explain to the employee what happens in succeeding processes whenever a wrong method or practice occurs in his department.

Defects at Drawing

There are many common defects that appear between the roving and spinning frames. One defect at the drawing frame occurs when drawing-frame operators, in their zeal to get out more hanks on a piecework basis, tie down the spoons to prevent the machine from knocking off when an end runs out. Here, instead of six ends being fed constantly, only five ends may be fed for a considerable length of time. Light yarn is the result.

Coarse Yarn Occurs

Coarse yarn occurs when the drawing-frame tender tosses an end from a full can onto an end from a can running out. As much as five or more yards of seven-ends-fed may be processed before the error is spotted. Cotton is wasted when the number delivered is heavier than standard. Operators should be made to realize that approximately 130 yds. of non-standard yarn may be spun from each yard of sliver fed at the first intermediate.

If filling bars occur, improper drawing practices may be one of the causes because the twist per inch in coarse yarn is high and in fine yarn low. Elimination of these defects should be of paramount interest to all concerned, especially if there are no further doublings beyond the drawing.

One major defect is classified as a whip-over. This fault can be traced easily because of the extreme coarseness of the yarn; it is twice as heavy as the standard number. The heavy roving that causes this fault will draft in spinning if front-roll pressure exceeds 30 lbs. The fault is common; and it occurs when an end breaks at the front roll of a roving frame, whips over to another flyer, and winds onto another roving bobbin.

To correct whip-overs, all intermediate tenders should be instructed to inspect the surrounding bobbins carefully and remove cross sections of double roving from the bobbins when a piece-up is made.

Sometimes double roving is difficult to spot if the whip-over end breaks off from the carrying end and piles up loosely. Here again, the tender should be cautioned to inspect the surrounding bobbins closely and remove any that are suspect.

Constant surveillance by the tender, who should stop the frame as quickly as possible while this defect is still visible in the roving, will minimize seconds in the cloth.

Clean stock waste visible in cloth may be flyer waste. If an end breaks at the roving frame, it may tangle up at the flyer and throw waste from the end of the broken stand onto surrounding bobbins.

This fault can be difficult to pinpoint correctly in the cloth; but if the waste has full-fiber staple, then it is similar to flyer waste under a controlled test.

In the yarn, this waste appears clean and slublike; and it will resist drafting if the waste at the broken end

becomes curled and twisted as the end whips onto another bobbin. In some instances at spinning, this waste will fall of its own weight onto the beam as the yarn passes through the front rolls.

In both the spinning room and card room, the operators should be alerted to watch for flyer waste. The roving tender, when he stops the frames, should remove all visible waste from the surrounding bobbins. Spinners on patrol should constantly scan the running roving in the creels and remove bad bobbins at once. Although the major functions of a spinner are to change roving and piece up ends, patrol and observation of the running roving in the creels are no less important.

Singling, a yarn that is many numbers lighter than standard, almost invariably is blamed on light laps from the picker. If compensating for the weight of the laps whenever the relative humidity fluctuates does not cure the trouble, most of the singling can be traced to the second intermediate where the back roving is two-ends fed. The breaking of one of these ends while the other continues to run produces a singling.

Traveler Drag Breaks End

At the spinning frames, if one end of the double roving used for filling breaks, the single roving running in the creel will usually break at the front rolls because of the traveler drag and weight. Although this article deals with cotton, it should be noted that some rayon yarns 2 ins. or more in staple length have been known to resist traveler drag and weight to spin as singlings for considerable lengths before breaking. The spinner should remove all singlings from the bobbins before piecing up the ends.

Suppose you are spinning 48s filling. The construction from spinning to the first intermediate is 6-hk. roving, double-end-fed, and a draft of 16. Construction at the second intermediate is 6-hk. roving delivered, 2-hk. back roving, double-end-fed, and a draft of 6. If one back end breaks and the other runs for a considerable length of time, 12-hk. roving is delivered.

To determine the hank fed at spinning where 12-hk. roving and 6-hk. roving coupled are fed, use this formula: $\frac{12\times6}{12+6}$ = 4-hk. roving. The yarn number delivered is: 4 hank x 16 draft = 64s.

While some of this singling may break down, much of it will spin through to the cloth. Experiments show that a traveler two sizes heavier can be used, but singlings may still spin through at the various lower-tension levels of the bobbin.

The spinner finds it difficult to detect this roving; so investigation should be concentrated at the second intermediate. There, the tender should be instructed to remove every bobbin found to be singling. If the singling is less than one layer, he should remove it and replace the bobbin on the spindle; if the singling is more than a layer, he should not replace the bobbin on the spindle.

Hard Piecings Make Slubs

Hard piecings at the first intermediate cause another defect that has been identified as a cause of slubby yarn. In certain styles, where the roving from the first intermediate is fed single in the spinning, the slubby yarn has an appearance somewhat similar to flyer waste.

A hard piecing is made when the operator pieces up a back end and twists the piecing too hard, sometimes wetting his fingers with saliva during the process. This method is definitely a bad practice because such a piecing will pass through the drafting rolls with three or four slublike sections.

Not all the piecings will pass through the spinning because some of it will break of its own weight, depending on the size of the slubs. However, this defect will put enough slubs through to the cloth to create a major quality problem.

Three Spinning Defects

In the spinning department, three major defects in stock are: (1) yarn piecings with long tails, (2) slubs from creel and beam cleaning, and (3) slubs caused by scavenger rolls hitting the yarn while they are being removed for cleaning.

To reduce yarn piecings with long tails, the supervisor should periodically pick up such piecings from each spinner, mount them on an 8x6-in. yarn board, and insert the names of the spinners on the boards. The boards can be used as a reference file to develop a progressive chart for instruction purposes, and soon this particular defect will change from a major problem to a minor one. The spinner with the best yarn piecings might be selected to help the supervisor train the other spinners.

Beam cleaning in some mills is done with a small metal tube having a bell opening at one end into which a hand mop is inserted handle-first so that the mop fits snugly in the bell. This cleaning device is ideal for mills without overhead cleaners, and it eliminates reaching over and under the rolls with a hand brush to clean the beam and bottom creels.

The operator inserts the metal tube between the running ends, grasps the handle of the mop that extends beyond the tube, and pushes the mop from the bell opening away from the running ends. A forward and backward motion on the mop handle cleans the beam and bottom creels. The mop is then pulled back into the bell opening and withdrawn.

Slubs in yarn may occur if the mop comes in contact with the roving or if the mop is not fully enclosed in the tube before it is withdrawn from between the ends. If, while the cleaner is being withdrawn, part of the mop extends beyond the bell opening and brushes against a running end, a slub will go into the yarn if the end does not break; and many ends don't break.

Cleaning Causes Slubs

In cleaning middle and top creels with a finger brush (a small brush with a foot-long handle) or with a felt-covered rod, great care must be taken to see that these cleaning implements do not strike the roving. Otherwise, slubs will adhere to the roving and pass into the yarn.

In removing scavenger rolls for cleaning, the spinners should be cautioned not to strike the running ends. This warning applies especially if there is a large lap on the roll. Most of the large laps should be plucked by hand before the roll is removed. The proper method is to lift lightly the last end in the section and swiftly remove the stick; to do otherwise increases the chances of the stick striking the running ends. Many ends will break if struck with the scavenger roll, but others will carry a slub into the yarn without breaking. Proper training methods will overcome this defect at the source.

Admittedly, there are many other defects from back processes that impair the quality of cloth. Regardless of how major or minor a defect may be, all defects should be carefully examined and analyzed; then they should be traced to their source and eliminated or so reduced that they no longer constitute a serious threat to high-quality production.

Recently, one large Eastern mill dramatically demonstrated many major causes of seconds by weaving a special piece of cloth containing various common defects, with each labeled as to its source. Every employee of the departments involved was shown the cloth, and steps were taken to trace each defect in his department. The mill found this idea to be of great aid in stopping defects at their source.

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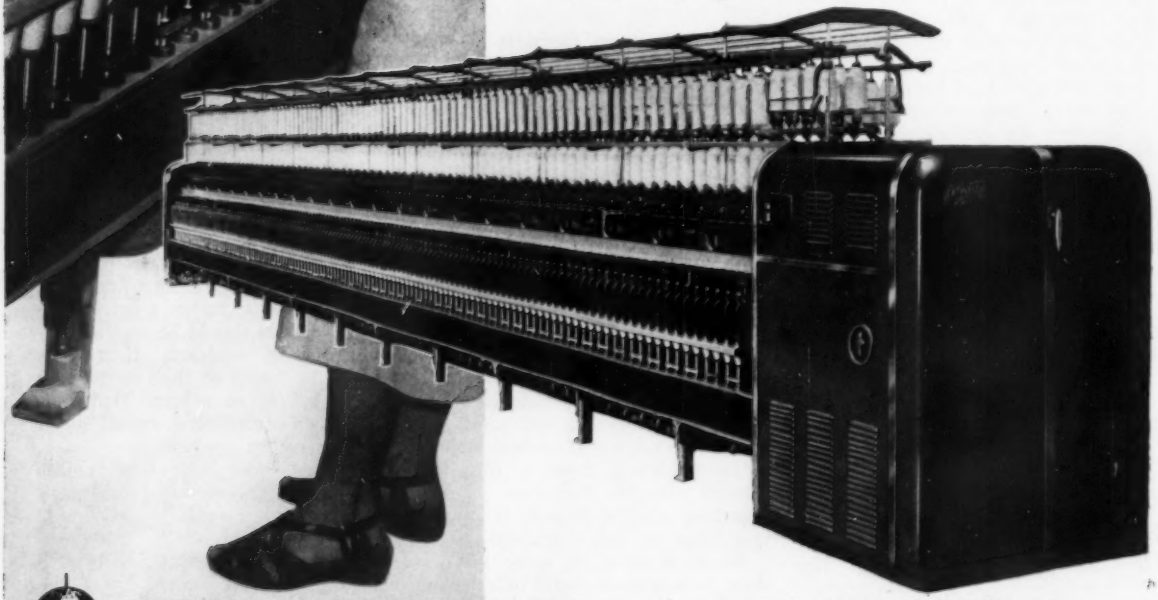

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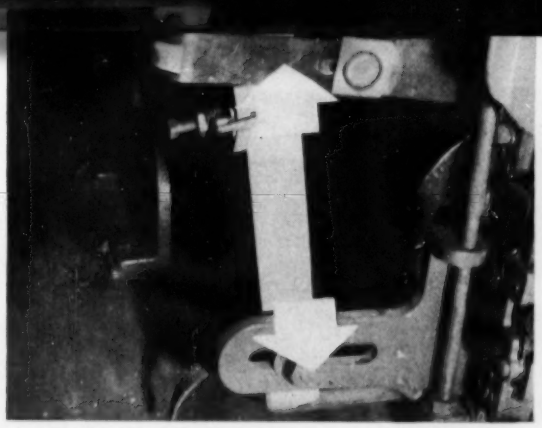
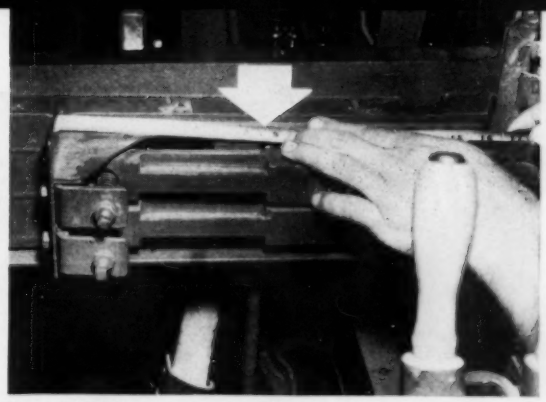
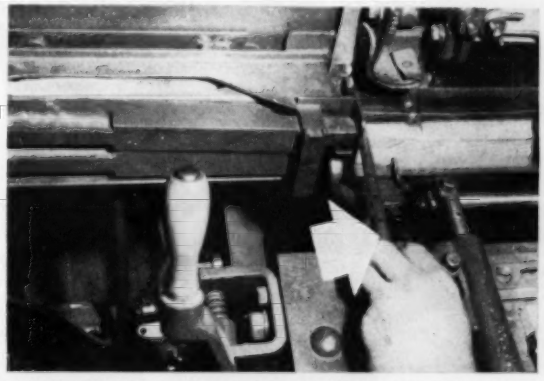


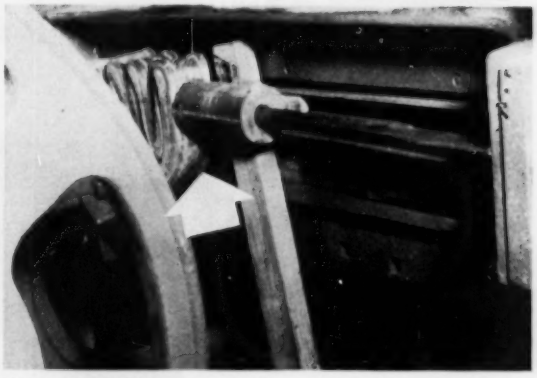
LUG STRAP is 10 ins. from the center of the picker-stick stud (bottom arrow) to the center of lug strap (top arrow).



PICKER-STICK STROKE (arrow) on the head end is 8½ ins. from the outside box guide to the picker front.



TIME OF PICK is 8 ins. (arrow) from the box back to the breastbeam on both the drive and head ends.



PICKER-ROD BUMPER (arrow) is built up so that the bumper stops the picker ½ to 1 in. past the stroke.

To Reduce S-6 Loom Stops— Set PICKING MOTIONS Properly

- Most of your loomfixers' flagged looms start at faulty picking motions. Bang-offs, for example, loosen loom nuts besides breaking parts.
- Here's how loomfixers can stop this trouble.

By W. R. CALLAWAY

THE PICKING MOTIONS on both ends of Crompton & Knowles S-6 looms are set alike, although the parallel motions on the drive end and head end are different. Because most loom trouble begins with the picking motion, it's necessary to keep the motion in good mechanical condition and properly set all the time.

The best way to be sure the picking motion is in constant good condition is to check it at each warp-out and repair and reset it, if necessary.

The front and back picking-shaft stands (bearings) must be set so that the picking shaft is level and 5⅜ ins. below the loom bottom shaft (camshaft). To measure the 5⅜-in. distance, use a gauge.

Set Parts With a Rule

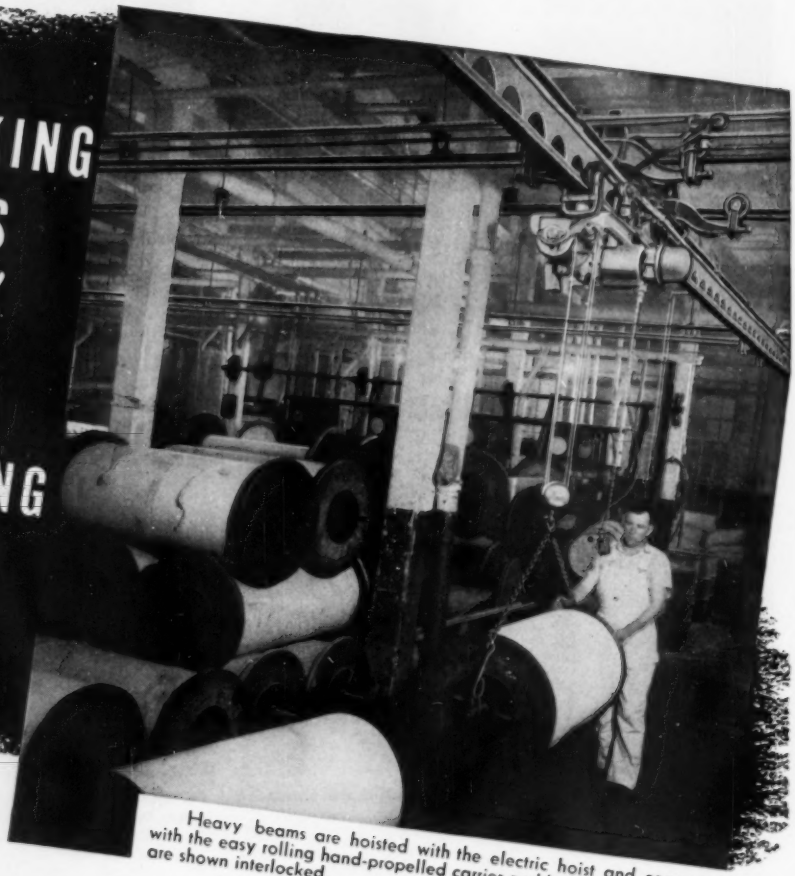
Set the picking shoe 1¾ ins. from the picking-shaft collar at the back bearing. This measurement, of course, varies with the type of shoe and width of loom. Be sure there's no end play in the picking shaft.

Position the screw in the picking-shaft stop so that the picking roll strikes the picking shoe 1 in. from the point.

Set the lug 10 ins. high; on the head end, this measurement is from the center of the stud in the rocker iron (picker-stick stud) to the center

CONTINUED ON PAGE 194

INTERLOCKING BRIDGES *Speed* BEAM HANDLING



Heavy beams are hoisted with the electric hoist and conveyed with the easy rolling hand-propelled carrier and bridges. Two bridges are shown interlocked.

SIMPLE, inexpensive, hand-propelled transfer bridges, as illustrated, provide hoisting and conveying service for the entire floor area of the slasher room bays in which they operate. Interlock mechanisms on the ends of the bridges permit locking two or more bridges together so that a carrier with its load can be transferred from one to the other.

Because of ball-bearing wheels and smooth, raised, flat track treads, extremely little effort is required to propel either a bridge or carrier. Cleveland Tramrail equipment has a guaranteed starting effort of 15 lbs. and running effort of 10 lbs. per ton weight.

Cleveland Tramrail has been tried and proven in dozens of textile mills of all kinds and sizes. It is lifting and conveying cotton, wool, rayon, nylon and silk in every stage of preparation wherever the weight is more than one man can handle.

If you are interested in improved efficiency and many other important advantages that are possible with Cleveland Tramrail, you owe it to yourself and to your company to get the facts.

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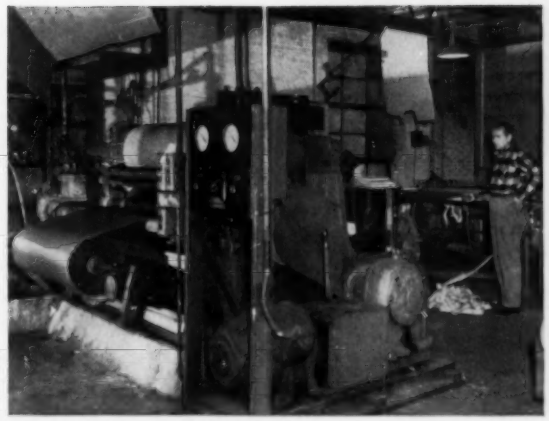
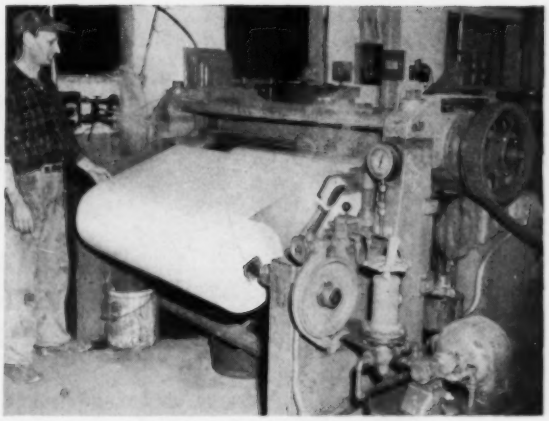


APPLYING FINISHING RESINS and water repellents to rayon-cotton failles is done in a pad-tenter range. For embossed work, the goods are brought out damp.



EMBOSSING is done at 10 to 12 tons pressure on a John Verduin gas-fired hydraulic embossing calender. The damp goods get a shot of steam just before entering the nip to insure sufficient moisture.

A Finisher Adds Spark To COTTON-RAYON FAILLE

Heavy rayon-and-cotton failles have been a staple item in the dress goods and drapery fields for years but for some time have been dormant style-wise. One finishing plant has combined the newer finishes with embossing to produce a varied line of all-over patterned effects that—

- **Enhance appearance**
- **Increase serviceability**
- **Build sales**

By ROBERT W. PINAULT, Assistant Editor, TEXTILE WORLD

An Eastern plant has developed a series of finishes on rayon-and-cotton failles that have put new eye appeal and serviceability into an old standard construction.

The failles are constructed with a rayon warp and a six-cord cotton filling woven with 28 ppi. to give an 8-oz. fabric 45 ins. wide in the gray. They would probably be classified as bengalines in an all-cotton construction.

As with all fabrics that have a prominent filling rib, failles tend to moiré during processing; and plain-finished failles are easily mussed.

To get around moiré from processing the plant eliminates rolling up hot, wet batches as much as possible and keeps tensions at a minimum.

The fabrics contain little more than a light sizing for the rayon warp; so heavy scouring is not necessary.

Batches of 600 to 700 yds. are made up and given 4 ends in 1¼° Bé caustic soda on jigs and then rinsed thoroughly and tenter dried.

Lighter shades for dress goods are dyed on a padder, and in some cases the finishing material is included in the mix. For these shades, direct dyes of good lightfastness are used.

Prepadding Cuts Jig Time

Medium and dark shades that cannot be properly dyed on a pad are given a prepadding in a dye solution and then moved onto the jigs. The pad formula is usually adjusted so that the required shade is developed with only small dye adds and salt, in from 6 to 10 ends.

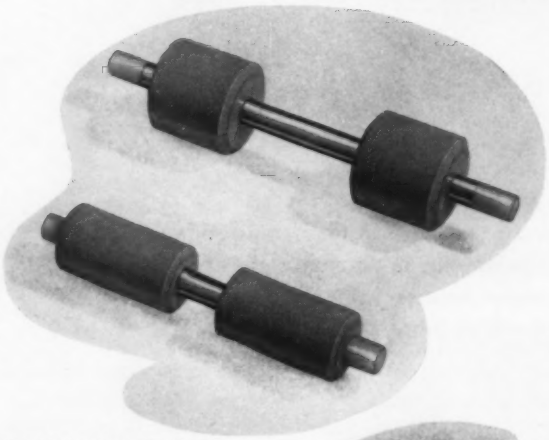
Colors that require aftertreating with copper-resin compounds may require a few more ends, but stress is put on adjusting the original pad formula so that jig ends can be kept down. And, of course, jig tensions are watched carefully because excess tension can create heavy moiré in just one end.

In addition to plain shrink-resistant finishes intended for garments to be dry-cleaned only, the plant applies crease-resistant and durable water-repellent finishes.

CONTINUED ON PAGE 194

ELIMINATE NECESSITY OF LUBRICATING DRAFTING COMPONENTS OF SPINNING AND ROVING FRAMES

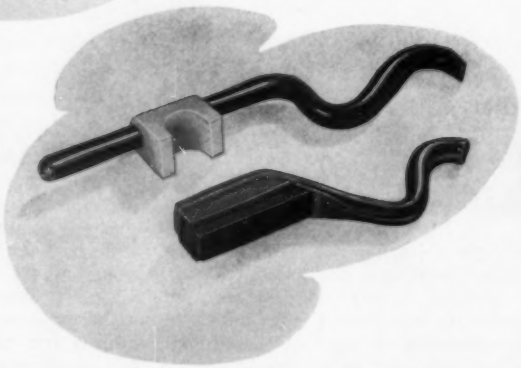
Install NEW SACO-LOWELL NYLON GUDGEONS AND INSERTS



Inspect your solid back top rolls, back saddles and tension roll supporting arms. If you detect worn surfaces, these new nylon gudgeons and inserts should be installed as quickly as possible.

Another development of SACO-LOWELL RESEARCH AND ENGINEERING that is continuously at work developing new ways to cut mill operating costs and improve profits. Continued evidence that "It Pays to Use Genuine Saco-Lowell Repair Parts."

Moulded nylon end gudgeons on solid back top rolls. Overall gudgeon diameter remains the same but roll and cap box never require lubrication, nor is there wear at gudgeons.



Adjustable Rulon or nylon bearing blocks in the back saddle. Eliminates wear on roll arbor and need for lubrication at that point.

Tension roll supporting arms reinforced with a semi-circular nylon insert at inner bend of arm. Wear which would affect roll concentricity, alignment of apron and stock quality is eliminated.

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POINTERS for SUPERVISORS

How Do You Measure Up To These Standards?

• Here are the qualities a leading American values in his own assistants. Because they are qualities any manager or supervisor needs to be successful, they are a good checklist you can apply to yourself.

By M. A. CROSS, Director of Industrial Relations, Dan River Mills, Inc.

Secretary of Defense Charles Wilson has stated in capsule form the qualities he looks for in a man who works for him:

"He must be an honest man.

"He must know something about the job for which he is being employed and be very interested in learning more.

"He must like to work.

"He mustn't think he's sick when he sweats.

"He must be a man of good habits, and his neighbors must think well of him."

With his ability to turn the pungent phrase, Mr. Wilson has isolated very effectively some of the key qualifications that are required of men in management. It could be time wisely spent to analyze these statements and to see how we, as supervisors, measure up to them.

1. "He must be an honest man."

The top management above you and the employees below you are entitled to expect nothing less than complete honesty on your part in every phase of your relationships with them. Your superiors must have facts and situations honestly reported to them if they are to know the true conditions in your department and if they are to advise or decide wisely on the course of action to be followed. Employees must know you to be an honest man if they are to have confidence in your judgments and decisions and if they are to work with you wholeheartedly toward the objectives you set.

Honesty, as Mr. Wilson emphasizes it, seems to call for the courage to admit errors, to confess mistakes so that they can be rectified. Covering up a mistake in judgment or an error in reporting by denying knowledge or placing responsibility elsewhere is a practice that neither management nor employees will appreciate.

2. "He must know something about the job for which he is being employed and be very interested in learning more."

Note that a supervisor is not required at first to know everything about the job—every detail, every procedure, every quirk in each machine. Rather the emphasis is on the man's curiosity, his determination to learn more about his job.

The supervisor who approaches his job complacent in his belief that he already knows everything about it places a ceiling on his performance. He is not interested in searching out new methods, he is not responsive to new ideas, he is not concerned with changes that are taking place in similar operations. He may make relatively few mistakes, but it is highly unlikely that he will add very much to his company's quest for superior performance.

I have often heard it said of a man: "He may not know much about the job, but he is not afraid to ask questions. He gets help from people who do know, and he runs a good job." This is your supervisor who is very interested in learning more. Recognizing his limitations, he is curious enough to seek out any information that will keep him in getting the job done better.

He wants to find improved methods, he wants to try new ideas and is not tied to the present practice because "we've been doing it this way for 20 years." He is the supervisor who can inspire enthusiasm among his subordinates. He is also the supervisor who interests higher management because he is demonstrating a characteristic always to be sought—the curiosity and the determination to learn more.

3. "He must like to work."

Does anything more have to be said? The evidence that he likes to work is that he does more than he is required to do and does it better than he is required to do. The mere fact of being physically present on the job for long hours doesn't establish that a supervisor likes to work; it may only indicate that he is afraid his position is in jeopardy. The man who goes the extra mile, who tackles jobs he is not required to tackle, who performs better than the expected standard, and who finds pleasure and satisfaction in doing so is the man who likes to work.

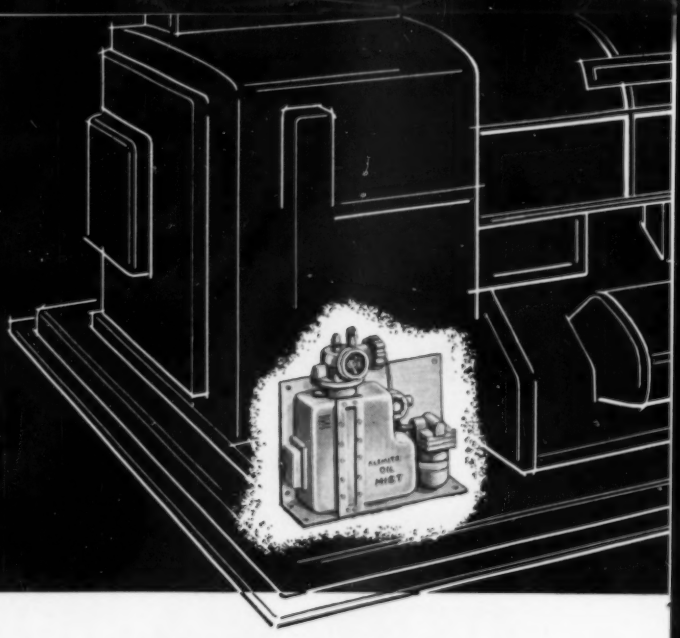
4. "He mustn't think he's sick when he sweats."

This remark perhaps requires some intepretation. Obviously, Mr. Wilson is not concerned about the man who sweats when he is working at hard physical labor in hot, humid weather, because that man doesn't think he's sick; he knows well enough why he's sweating.

But how about the situation, which happens to every supervisor, when he is on the spot, the pressure is on, he is groping for the answer that will take the heat off, and suddenly perspiration breaks out on his forehead? I suppose you'd call that an emotional sweat. It's normal and human. But if you think you're sick when you sweat under those conditions, then I take it to be Mr. Wilson's meaning that he has some doubts about you.

CONTINUED ON PAGE 196

save up to 90% on lubricating costs!



ALEMITE OIL-MIST AUTOMATIC LUBRICATION

multiplies bearing life...cuts product spoilage ...boosts machine output in almost every industry!

Alemite Oil-Mist Automatic Lubrication brings remarkable savings... in lubricants, man-hours, bearing life, and decreased product spoilage.

Alemite Oil-Mist *atomizes* oil into mist—distributes it through tubing to bearings—bathes all bearing surfaces with a cool film of clean oil. Maintains uniform oil film on plain and anti-friction bearings, gears and chains—despite variations in load, temperature or speed. Amazingly simple, continuous and fully automatic . . . Alemite Oil-Mist eliminates the waste and uncertainties of the "human element" in lubrication.

Let us show you how Alemite Oil-Mist provides more efficient, foolproof lubrication, at lower cost! Mail coupon below for a graphic demonstration!

8 ADVANTAGES of the ALEMITE OIL-MIST System

1. Continuous Lubrication—Constantly deposits fresh, clean film of oil on all surfaces of all bearings in the system.

2. Fully Automatic Lubrication—Can start and stop with operation of machine switch.

3. Elimination of Guesswork—No bearing can be over-looked, nor over-lubricated! Every bearing picks up only as much Oil-Mist as it needs.

4. Reduction of Bearing Temperatures—Acts as bearing coolant, can lower bearing temperatures as much as 20° F.

5. Reduction of Types of Oil—Reduces number of oils that must be stocked, handled, and applied.

6. Elimination of Downtime—All bearings in the system are constantly lubricated while machines continue to operate.

7. Extension of Bearing Life—Multiplies bearing life many times. Life of grinding machine bearings has been extended from 400 to 7,000 hours!

8. As High As 90% Less Oil Consumption—Alemite Oil-Mist usually consumes about 1/10 the amount consumed by any other oiling method!

Alemite Oil-Mist Lubricates ALL Types of Mechanisms

Anti-friction Bearings | Plain Bearings | Chain | Gear | Gear Cases

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ALEMITE

REG. U. S. PAT. OFF.

A Product of STEWART-WARNER CORPORATION

Alemite Division of Stewart-Warner, Dept. J-86
1850 Diversey Parkway, Chicago 14, Illinois

☐ Please send me a FREE copy of your new and complete Oil-Mist catalog.

☐ Please have your Alemite Lubrication Representative arrange a no-obligation demonstration.

My Name .....

Title .....

Company .....

Street .....

City ..... State .....

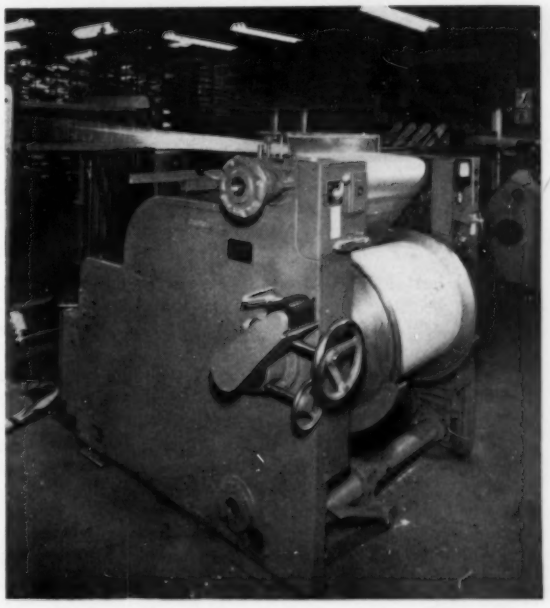
EQUIPMENT and SUPPLY NEWS

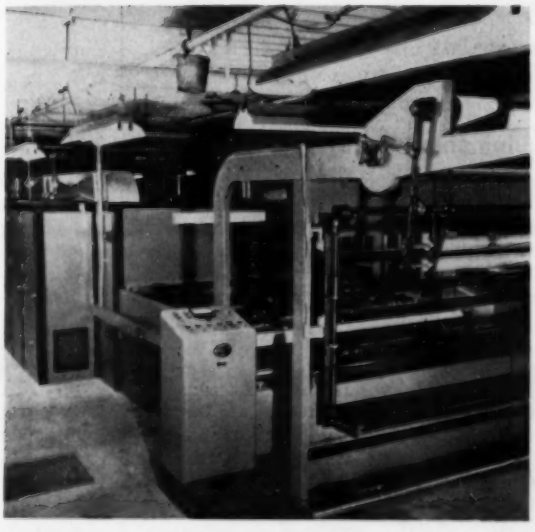
Tricot Warper

The Kidde-Sipp high-speed tricot sectional warper, manufactured by Kidde Mfg. Co., Inc., Bloomfield, N. J., is made in varying widths to produce 14- to 42-in.-width beams. The warper runs at 75 to 600 yds. per min. and is equipped with hydraulic loading of the pressure roll and hydraulic beam doffing.

The drive of the machine is direct with only one belt, and constant yarn speed is automatically maintained. A Warner electric brake is fitted to the main beam drive and the diversion roll.

Circle T-1 on Reader-Service Card





High-Speed Jet Dryer

A single-pass dryer for synthetics, blends, and woolen fabrics has been marketed by James Hunter Machine Co., Orange, Mass.

Improved distribution of heated air at high velocity provides even drying from selvage to selvage and between face and back of the goods.

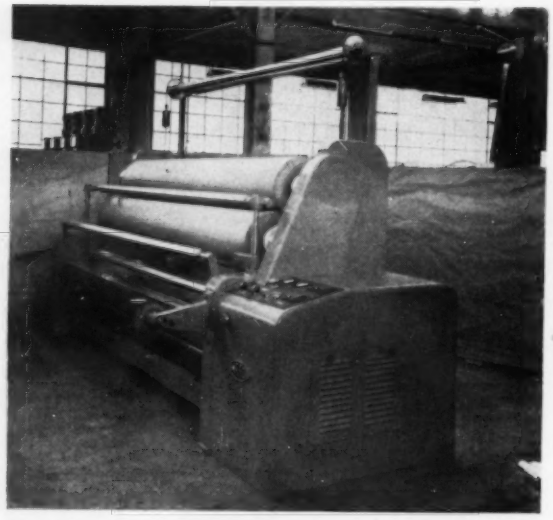
The pin tenter is equipped with an overfeed, Askania guider, and a folder.

Accessibility of the fans and heating chambers makes it easy to clean or repair these units. Filter screens are mounted on the inspection doors, so that they are exposed when the door is open and may be brushed off without handling. The heaters are easily blown free of any flock that may have come through the filters.

Automatic control of the whole operation is centralized in two cubicle panels at the front of the dryer. A dynamic braking system provides quick stops even at top speed.

Pin-rail design angles the pins 40° from vertical after passing into the drying section of the tenter, so that air currents cannot blow the fabric off the pins.

Circle T-2 on Reader-Service Card



Two-Roll Pad

A general-purpose pad has been developed by Maag Bros. Machine Works, Kusnacht-Zurich, Switzerland. The machine features pneumatic loading and can exert pressures up to 13 tons across the face of the rolls.

The trough used to carry the dyes or finishing materials may be raised or lowered by air pressure. The padder may be supplied with a general-purpose trough or one designed especially for dyeing.

The machine is supplied with its own air compressor, and all controls are centralized. Trumeter Co., 1265 Broadway, New York 1, N. Y., is the U. S. agent.

Circle T-3 on Reader-Service Card

Push-Button Loom

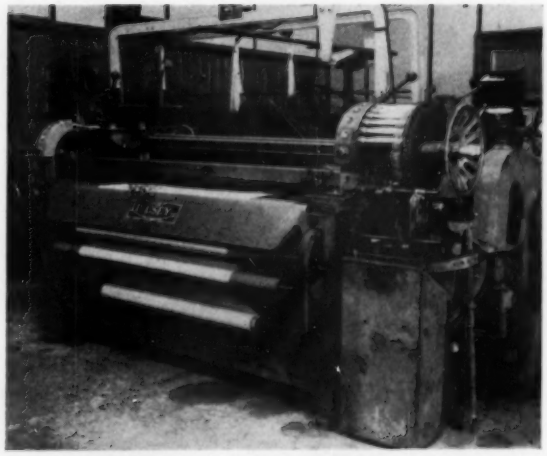
A push-button loom that stops in predetermined positions has been developed by Henry Livesey Ltd., Blackburn, Lancashire, England. Agent in the U. S. is Trumeter Co., 1265 Broadway, New York 1, N. Y.

The loom is a two-shuttle drop-box filling-mixing loom with a circular battery and is designed to weave a wide range of fine fabrics, including filament rayon.

Push-button control is said to eliminate starting marks caused by loom stops. It also controls a group of looms from a central station.

Four push buttons act to: (1) stop the loom when the heddles are level on plain cloth, (2) put in a single pick of filling from heddle position to heddle position, (3) start the loom, and (4) reverse the loom to remove a broken pick.

Bang-offs are made electrically. The loom also stops if the box motion is out of action by a mispick. It starts at top speed on the first pick.



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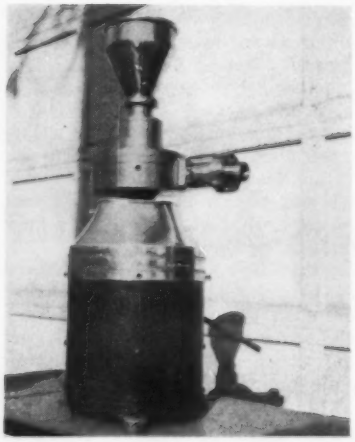


Homogenizing Equipment

A 1-hp. homogenizer that operates at 3,600 rpm. is said to process 1,000 lbs. per hr. of semipastes or other viscous materials with viscosities up to 30,000 cp. The machine is announced by Buschman Products, Inc., 369 Lexington Ave., New York 17, N. Y.

With the homogenizer, Jet/Mogenizer, every particle of wet and dry formulation is dispersed. Cooking operations for some gums and starches may be completely omitted by a single pass of the wet and dry mix through the homogenizer.

Circle T-5 on Reader-Service Card

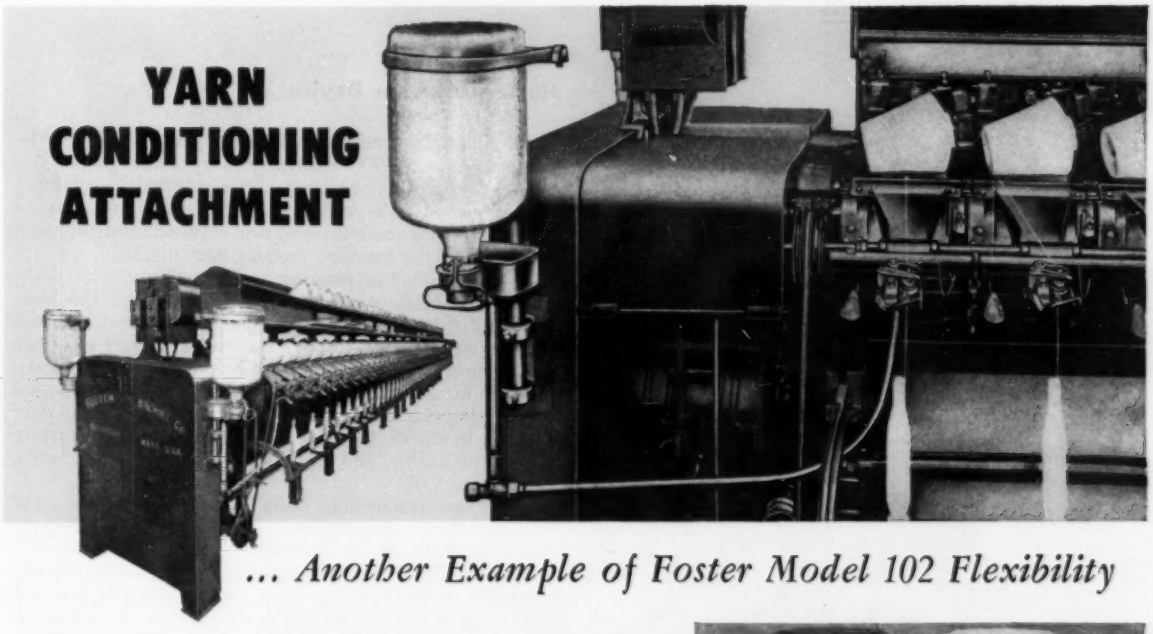
Cloth Dryer

A roll dryer with improved air flow and adjustable hydraulic drive has been announced by National Drying Machine Co., Lehigh Ave. and Hancock Sts., Philadelphia, Pa. Stainless-steel expander rolls located inside the dryer eliminate creasing of fabric passing through. The hydraulic drive can be adjusted to give any tension desired.

Known as Model HR-4, the dryer can be used for predrying, curing, or as a straight dryer. The heating equipment can be supplied to use either steam or gas.

Circle T-6 on Reader-Service Card

YARN CONDITIONING ATTACHMENT



... *Another Example of Foster Model 102 Flexibility*

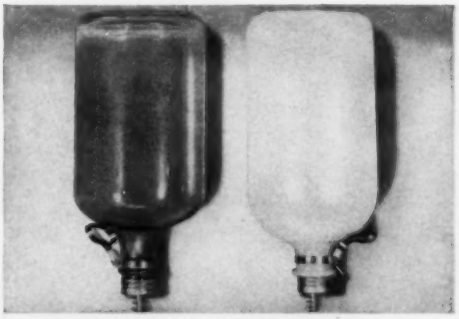
This flexibility feature of the Foster Model 102 Winder is particularly important, because some types of winders can not use yarn conditioning attachments.

This attachment lubricates and softens yarns with a wax or oil emulsion. It restores normal moisture content and gives the yarn a soft hand, so that it will run well in the knitting machine and reduce needle breakage.

Readily applied to existing machines, or supplied with new machines, it is particularly useful when winding mercerized yarn or package dyed yarn. It can condition any type of yarn at any speed within the capacity of the machine — up to 750 y.p.m. It also permits numerous variations in percentage of moisture pickup.

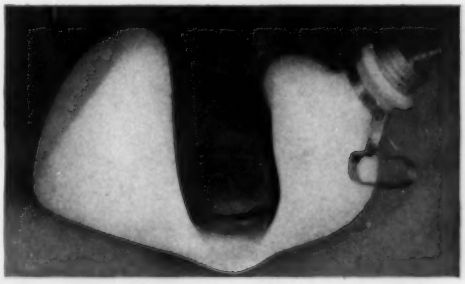
Other flexibility features of the Foster Model 102 are: — 1. Handles any type or count of staple yarn except the coarsest. 2. Produces any cone taper commonly used and any angle of wind from 9° to 18°, with simple and inexpensive changes. 3. Can be equipped to wind knitting cones, warping cones, parallel tubes, dye packages or short traverse cheeses. 4. Winds dyed yarn, even when damp. 5. Can be built to wind up to 7″ traverse.

Who knows what you'll be winding a few years from now? Be prepared for the unforseen insofar as possible. Get all the facts about the Foster Model 102. Send for Bulletin A-95 now.



GLASS PLASTIC

PLASTIC BOTTLES now available for Foster Yarn Conditioning Attachment. Weigh only 2 lbs. ½ oz. Glass bottle weighs 6 lbs. 15½ oz.



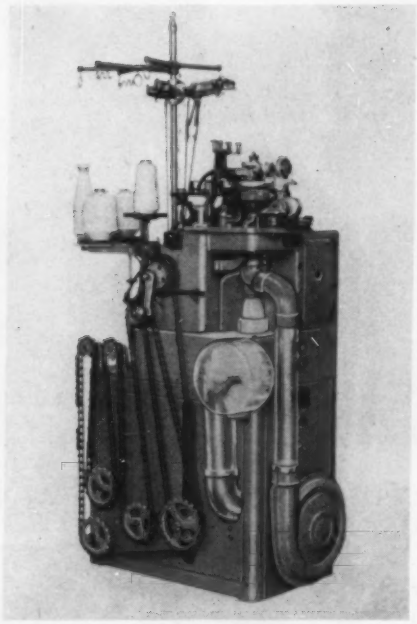
UNBREAKABLE. Does not shatter, if dropped. Lasts indefinitely; eliminates accidents; pays for itself many times over.

FOSTER MACHINE COMPANY

Westfield, Massachusetts, U. S. A.
Southern Office – Johnston Bldg., Charlotte, N. C.

A Winder for Every Textile Purpose

Canadian Representative — Ross Whitehead & Co., Ltd., 1475 Mountain St., Montreal, Que. and 100 Dixie Plaza, Port Credit, Ont.
European Representative — Muschamp Textile Machinery Limited, Keb Lane Bardsley, Oldham, England



Hosiery Tension Device

An automatic tension device developed by Fidelity Machine Co., Inc., 3908 Frankford Ave., Philadelphia, Pa., for its Model 400 machine can be adapted to all types of seamless-hosiery machines. No major alteration of original knitting-machine design is required, and the over-all height of the machine remains unchanged.

As each individual stocking completes the circular knitting cycle, it is automatically withdrawn from the knitting head through the air take-up tube and deposited in a transparent receptacle for easy removal. Up to six stockings can accumulate in the receptacle before they are removed.

Uniform air tension on the stocking is maintained throughout the entire knitting cycle. Removal of the stocking by the device does not draw oil from the knitting needles or sinkers, and it does not draw the yarn during knitting.

There are no moving parts to cause damage to the stocking. The nylon retainer reduces the danger of picks when the stockings are removed.

The tension device remains in operation constantly regardless of the knitting speed. No resetting is required if the machine is racked by hand. Lifting the dial cap for inspection does not affect air take-up tension. Air circulation through the unit provides cooling advantages for machine operation.

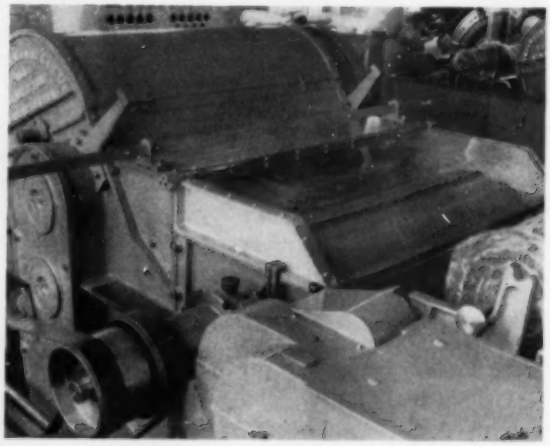
Circle T-7 on Reader-Service Card

Blending Compartment

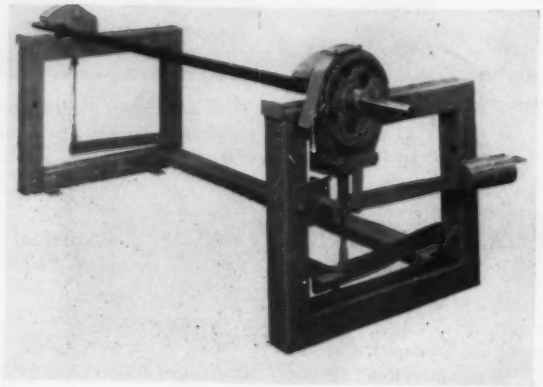
The Shirley beater compartment, developed by the British Cotton Industry Research Association, is now being manufactured and sold by Tweedales & Smalley (1920) Ltd., Castleton, England.

The machine, which mixes and blends both cotton and synthetic fiber, has a special beater, baffle, and cover and can be attached to a scutcher. Basically, the beater compartment consists of a metal cylinder to which are attached six Kirschner lags equally spaced. Over-all diameter is 16 ins.

The compartment, suitable for use with almost all types of cotton and synthetic fibers up to 1½ ins. long, is said to be especially useful for blending unlike or different-colored fibers.



Circle T-8 on Reader-Service Card



Center-Bar Let-off

A let-off designed for heavy duty in finishing plants has been marketed by Mount Hope Machinery Co., Taunton, Mass.

The center bar revolves on phenolic casters, and a rugged braking mechanism with quickly detachable bands can be adjusted to give the desired tension. The center bar is automatically locked in place when it is pushed into the bearing surfaces and is released by a foot treadle. Electric operation of the braking mechanism can be provided.

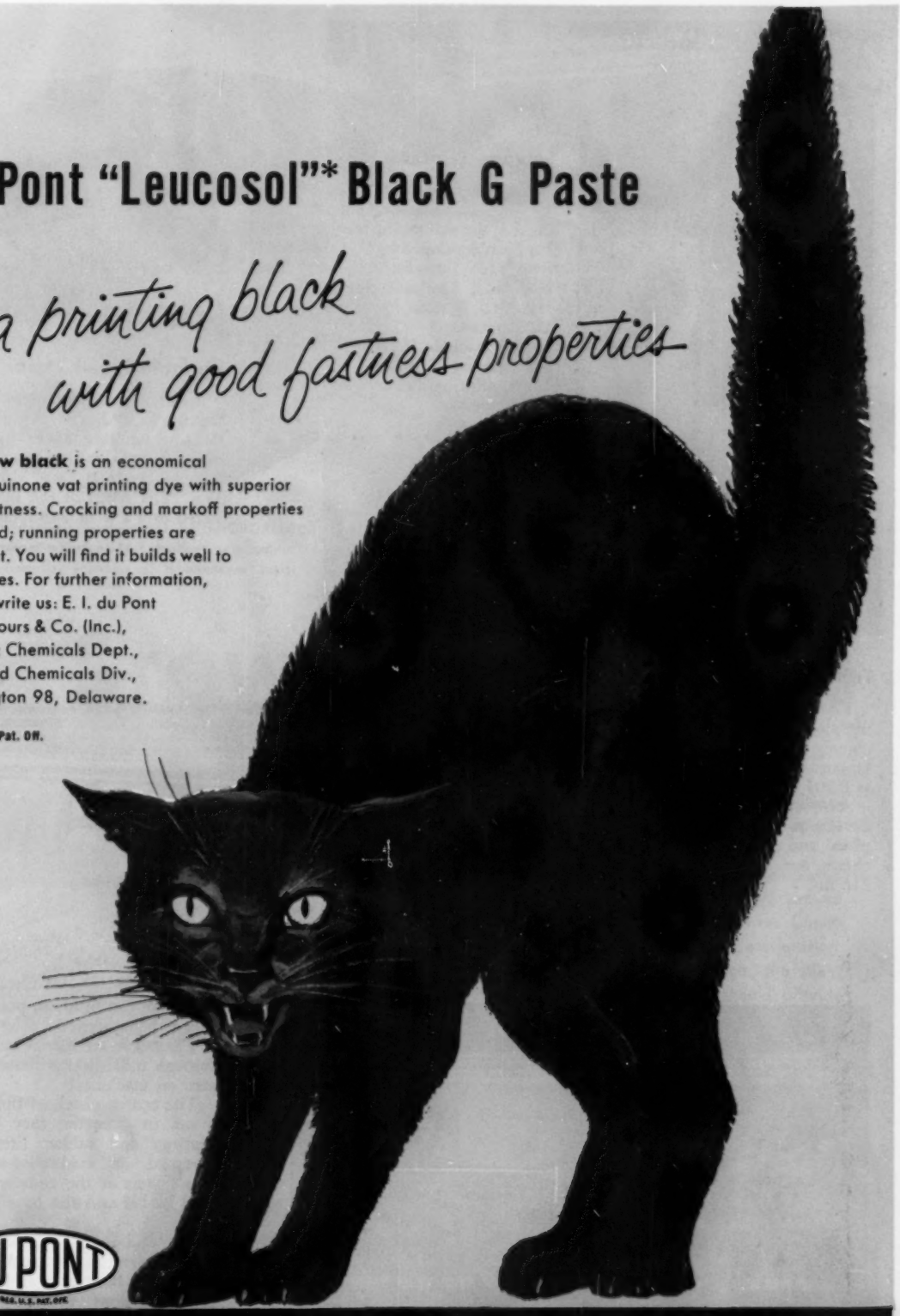
Circle T-9 on Reader-Service Card

Du Pont "Leucosol"* Black G Paste

—a printing black with good fastness properties

This new black is an economical anthraquinone vat printing dye with superior light fastness. Crocking and markoff properties are good; running properties are excellent. You will find it builds well to jet shades. For further information, please write us: E. I. du Pont de Nemours & Co. (Inc.), Organic Chemicals Dept., Dyes and Chemicals Div., Wilmington 98, Delaware.

*Reg. U.S. Pat. Off.



DU PONT

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DU PONT DYES

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

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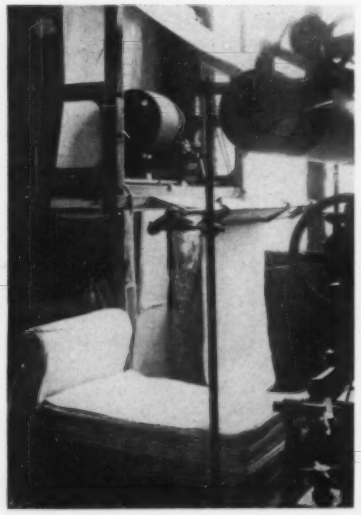
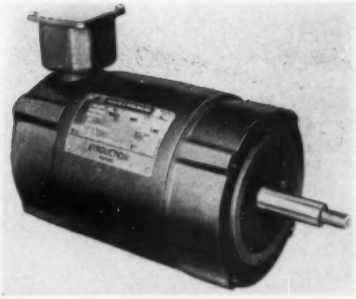


Selvage Printer

An attachment for tenters or examining machines that permits printing on the selvage of any flat fabric has been developed by G. Durrant and Sons Ltd., Bury St., Stockport, England. R. J. Dealey & Sons, 263 Summer St., Boston 10, Mass., is the U. S. agent.

The machine is cloth-powered and will print at ½-, 1-, or 2-yd. intervals. Metal printing dies are used to create the impression.

Circle T-10 on Reader-Service Card



Variable-Speed Motor

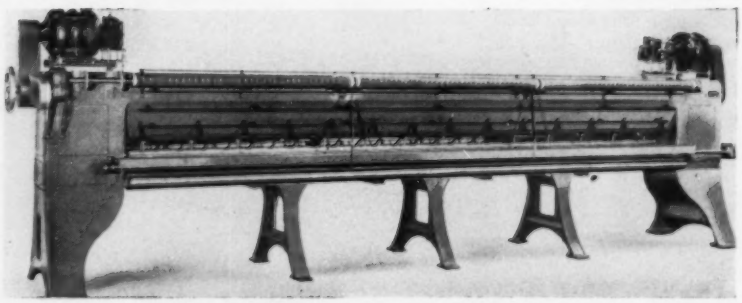
An adjustable-speed motor in capacities up to 40 hp. for winding operations on synthetic fibers has been announced by Allis-Chalmers Mfg. Co., General Products Div., Milwaukee 1, Wis. The speed of the motor is adjusted over a 6- or 7-to-1 range.

Circle T-11 on Reader-Service Card

Tufting Machines

Fine-gauge tufting machines are being produced by Cobble Brothers Machinery Co., Inc., Riverside Dr., Chattanooga, Tenn. The gauge runs as low as 0.105 ins.

Another gauge, ⅛ in., has also been developed to make carpets of both plain and tweed yarns. Both machines are made in widths up to 216 ins.



Circle T-12 on Reader-Service Card

Roving-Can Trucks

Trucks to hold up to eight roving cans of 15- to 18-in. dia. are being manufactured by Bennett Rose Co., P. O. Box 8, Roebuck, S. C. Flanges hold each can firmly in position while they're being moved.

The trucks are narrow enough to go through mill alleys without damaging yarn on machines.

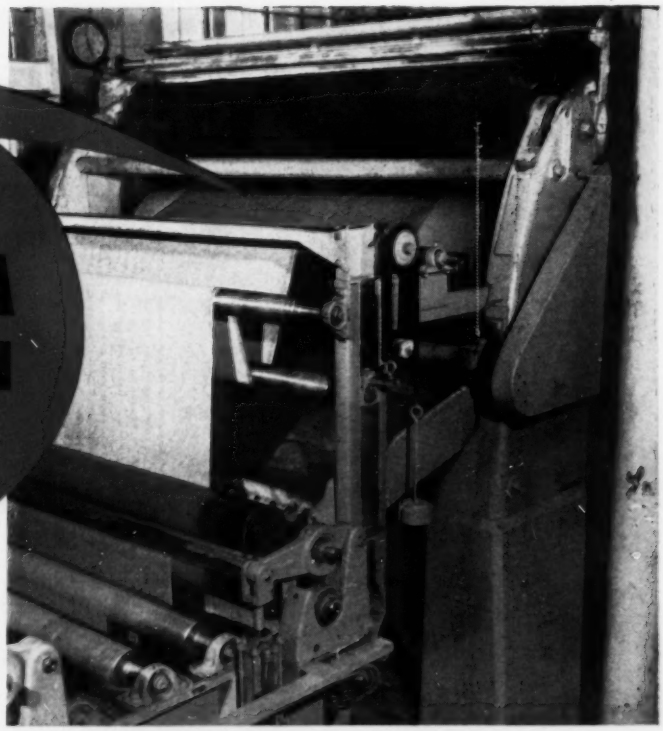
The center wheels of the trucks are 6 ins. in diameter; they have roller bearings and rubber tires and are mounted on cold-rolled-steel axles. The casters at the ends are made of hard rubber and also have roller bearings.

The end casters are swivel wheels, and each end of the truck has a handle so that the truck can be pulled in two directions without turning it around.

Smaller trucks are made to handle two, four, or six roving cans.

Circle T-13 on Reader-Service Card

for **UNIFORM EXTRACTION** *here*



Outstanding performance of MICROROK bottom roll in this carbonizer resulted in substantial economy of maintenance costs.

STOWE-WOODWARD

MICROROK® BOTTOM ROLLS

This ad first appeared in August 1954... Now after another two years of continuous operation the Microrok roll is still going strong. Think of the savings this could bring to Your Plant.

To provide the squeezing action which insures uniform acid extraction and eliminates shaded goods, the MICROROK roll above was installed in a carbonizer in a well known textile finishing plant.*

More than 2 years of round-the-clock operation have demonstrated exceptional performance. Its unusual wearing qualities were proved when micrometer tests showed not even .001" loss of crown. Chemically inert, the MICROROK roll is impervious to acid deterioration.

Based on this extraordinary record of performance, the plant superintendent estimates that the MICROROK roll should provide continuous maintenance-free service for 5 years.

Compared with conventional rolls normally requiring regrinding at least annually, this represents an important saving . . . both in maintenance costs and in the elimination of down time involved in the removal of hard-to-get-at bottom rolls.

Ask your Stowe-Woodward representative about MICROROK

*Name supplied on request

S-W INC.

STOWE-WOODWARD, Inc.

Craftsmen in rubber rolls

NEENAH, WISCONSIN • NEWTON 64, MASS. • GRIFFIN, GEORGIA

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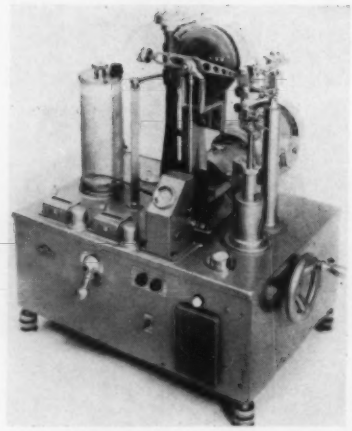
Fiber Tester



A machine for testing mechanical properties of textile fibers has been developed by Karl Frank GmbH, Weinheim-Birkenau, West Germany. The instrument is equipped with a standard curve-recording unit and two computers that automatically add the individual strength and elongation figures obtained during the test. At the end of each series of tests, the machine indicates the median.

The design is based on the conventional torsion-balance method used to produce and measure the applied stress. The spring is connected to the drive unit and recording unit to keep the energy used for recording and computing from affecting the fiber.

The instrument has a measuring range from 0 to 20 grams. The gears affect the recording needle to cover the measuring range within periods between 15 and 210 secs. according to the adjusted rate of load application. The distance between holding clamps is 10 mm., and the minimum fiber length required for tension tests without auxiliary equipment is about 25 mm.

A balance suspended on points carries one clamp on its right arm and the compensating weights on its left arm. A spiral coil is rigidly connected to a motor-driven worm gear. The stress in the spring elongates the fiber between the clamps.

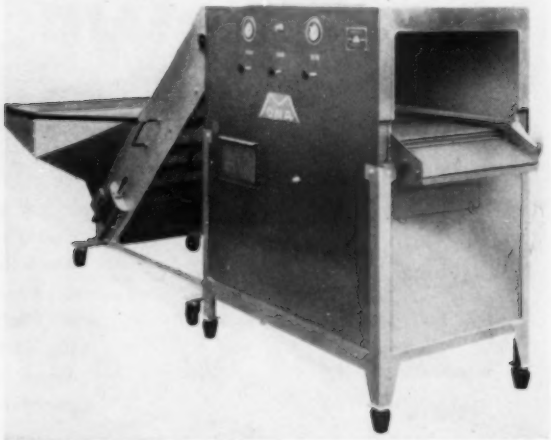
At zero position, the stress of the spiral spring and the angle of rotation of the worm gear is proportional, and the lower clamp is moved down. The hand-operated wheel is geared to move the lower clamp, and gears transmit the revolutions to the recording drum and the computer unit.

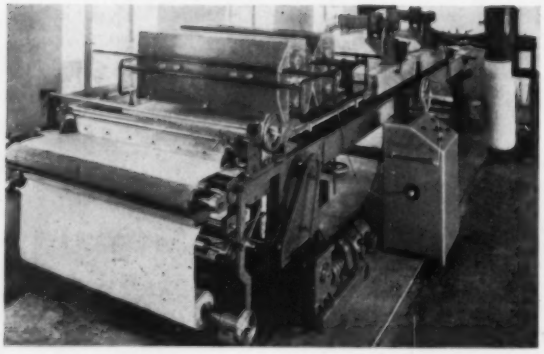
Circle T-14 on Reader-Service Card

Yarn Conditioner

An improved Monalit yarn-conditioning machine has been announced by Mona Industries, Inc., P. O. Box 1786, Patterson 17, N. J. Features include stainless-steel parts where the yarn touches, stepless spray regulation, pump-overpressure protection, simple removal of feeding unit, easy accessibility to service controls, and gentle handling of the yarn.

Circle T-15 on Reader-Service Card





Flocking Machine

A machine designed to apply flock to wide fabrics has been marketed by Vollenweider & Saladin AG, Horgen, Switzerland.

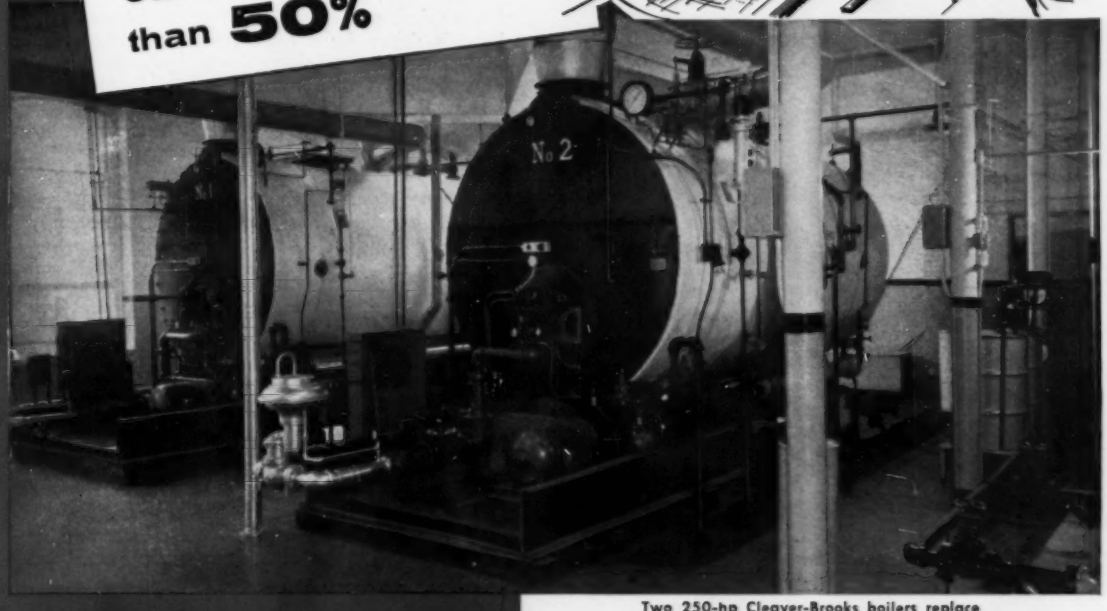
Cloth transport is by a pin-clip tenter supplied with suitable guiding and pinning devices.

The adhesive is applied by an adjustable coating knife mounted over a soft-rubber roll so that film thickness can be regulated exactly.

Flock deposition is by electrostatic means, and recuperation of excess flock is provided for. Maximum speed is over 5 yds. per min. Fabrics up to 56 ins. wide can be flocked on the machine.

Circle T-16 on Reader-Service Card

Newberry Mills survey showed plant engineers how to cut fuel costs more than 50%



Two 250-hp Cleaver-Brooks boilers replace four obsolete units. "Most attractive boiler room in the South," says Newberry Mills.

Two new Cleaver-Brooks boilers SAVE $23,445 the first year

G. B. Sessions, superintendent of Newberry Mills, says, "Eighteen months ago we installed two new Cleaver-Brooks boilers at Newberry Mills, Newberry, S.C., that are paying for themselves at a fast clip. At the present rate of savings, the boilers will be paid for in less than two years of operation. Fuel costs have been cut more than 50%."

When Newberry Mills engaged consulting engineers to analyze their heat and power load, they learned the startling facts of boiler obsolescence. They learned how they could cut operating costs with efficient boiler equipment. Their experience proves how the new boilers provided fuel and labor savings, a clean boiler room, free of soot, and reduced maintenance costs.

The savings on fuel for the first year of operation were an impressive $14,045.41. Maintenance savings amounted to $9,399.59. Periodic checks showed boilers performed at a fuel-to-steam efficiency of 82.88% on No. 6 oil.

Efficient Cleaver-Brooks four-pass construction with forced draft give you more for your fuel dollar. Four pass design maintains high gas velocity for effective scrubbing action. Forced draft design keeps fans running cool and trouble-free.

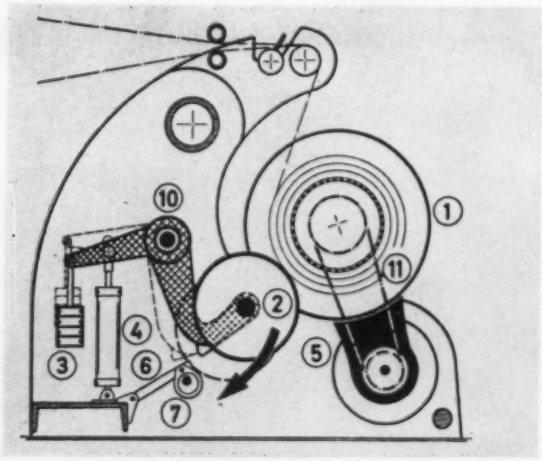
PERIODIC SURVEYS PAY. Find out how you can save with Cleaver-Brooks boilers. Get in touch with your local Cleaver-Brooks representative, or write: Cleaver-Brooks Company, Dept. J, 361 E. Keefe Ave., Milwaukee 12, Wis. Cable address: CLEBRO — Milwaukee — all codes.

Send us your name to receive regular issues of new "Cleaver-Brooks Bulletin" — the boiler newspaper!

Cleaver-Brooks®

TWENTY-FIVE YEARS OF LEADERSHIP
BY THE ORIGINATORS OF THE SELF-CONTAINED BOILER

For more data, write this page number on Reader-Service card. →



Circle T-17 on Reader-Service Card

Beam Warper

The Universal Model-EZD high-production beam warper, built by W. Schlafhorst & Co., Maschinenfabrik, M. Gladbach, Germany, is equipped with direct beam drive and runs with stepless hydraulic-regulated warping speeds up to 600 yds. per min.

The warper can be adjusted for producing perfect beams for the slasher or for winding soft dye beams. The driving head is driven by a three-phase, squirrel-cage induction motor, over a Boehringer-Sturm hydraulic oil drive and duplex chains. When the machine is adjusted for dye beams, the pressure of the contact roller can be reduced to a low value. To protect the yarn, the machine speeds up smoothly.

The connection of both beam arms keeps the yarn from building up conewise on the beam and insures an even yarn tension over the whole beam width.

The measuring roller has a large diameter and a great circumferential angle to prevent yarn slippage in starting and braking the machine.

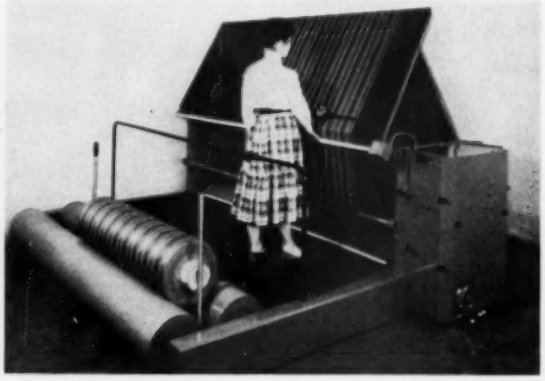
The comb is kept clean by compressed air. The equipment for electrical stoppage and hydraulic braking provides short braking for the yarn.

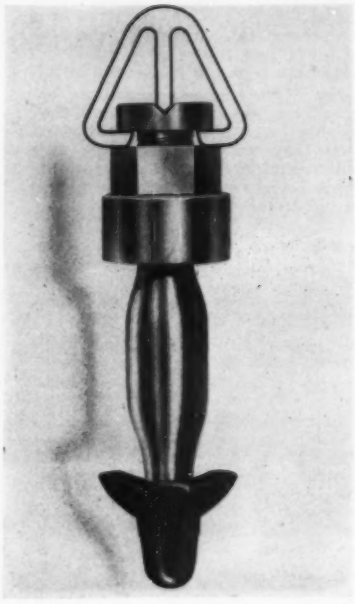
Examining Perch

A constant-speed batcher that will handle rolls up to 39 ins. in diameter is a feature of a perch built by Ulrich Steinemann Ag. Ltd., St. Gallen-Winkeln Maschinenfabrik Engineering Works, Switzerland.

Fabric may be run forward or backward for adequate inspection. Wide models may be supplied with a seat that travels on a track in front of the perch to help the operator scan the fabric without undue fatigue.

Circle T-18 on Reader-Service Card





Bobbin Holder

A bobbin holder that maintains constant tension, eliminates stretched roving, and prevents roving from sloughing off without the use of drag arms has been announced by Pneumafil Corp., 2516 Wilkinson Blvd., Charlotte, N. C.

Called Tension-rite, the bobbin holder consists of five aluminum-alloy parts and a Bolite bearing. The gripper head, made of flexible molded material, holds the bobbin firmly and at the same time acts as a vibration absorber. The bobbin holder is streamlined to prevent the accumulation of lint.

Circle T-19 on Reader-Service Card

Recording Tensiometer

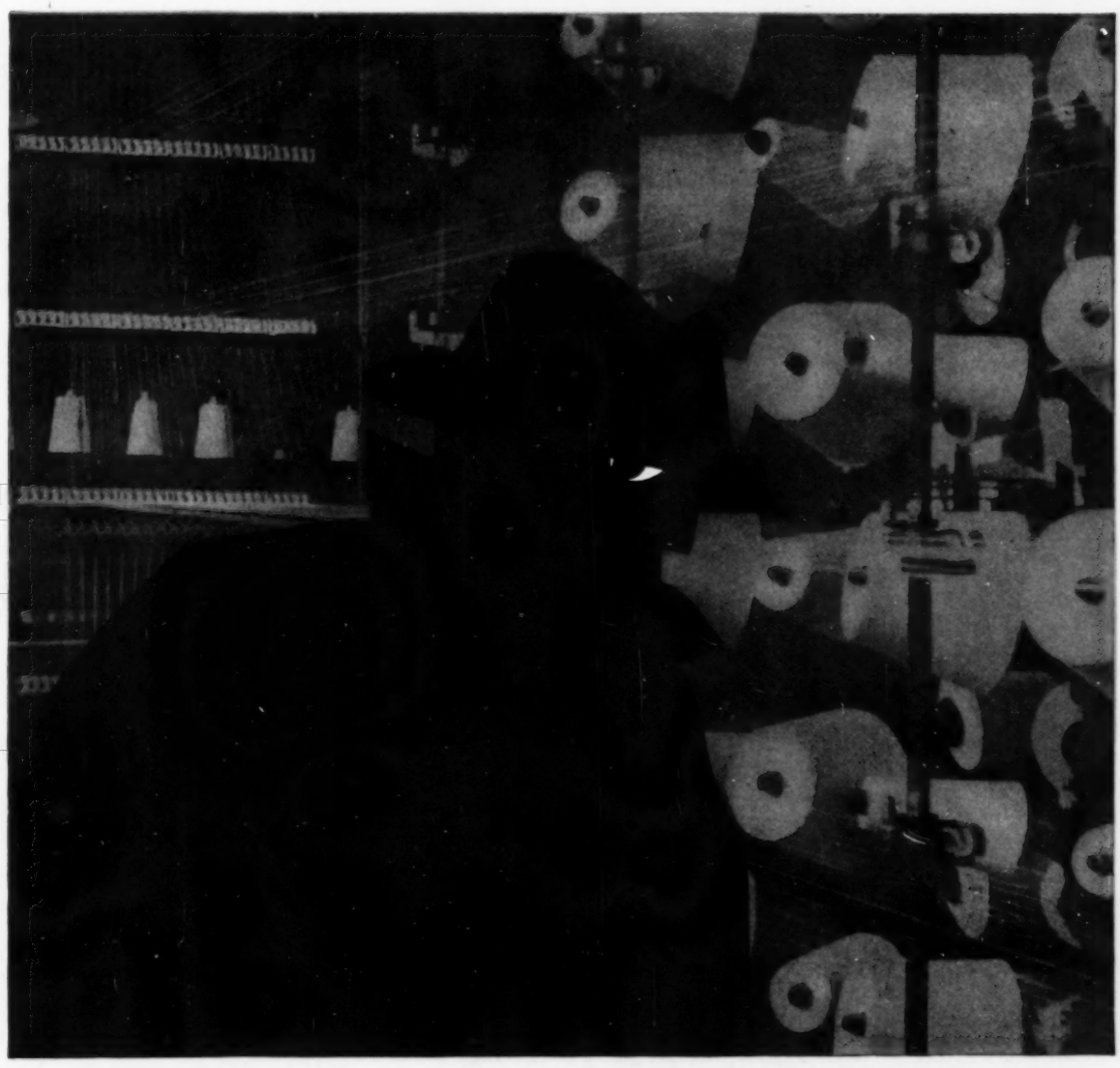
An increased-range sensing head for its high-speed recording tensiometer has been announced by Custom Scientific Instruments, Inc., Kearny, N. J.

The sensing heads are designed for ease of installation on the running yarn. The two pulleys are placed over the running yarn, and the sensing head is twisted until the yarn forms an S-shape over the pulleys.

The new head has a maximum range of 50 lbs. and a maximum sensitivity of 1-mm. deflection per 30 grams of tension. The sensing heads are sold separate or with the electrical equipment and cart.

Circle T-20 on Reader-Service Card

CONTINUED ON PAGE 196



DON'T SWINDLE YOUR SPINDLE

Don't swindle your spindle out of adequate lubrication in your search for a clear lubricant to eliminate staining problems.

A good lubricant must not only be clear, it must also minimize friction and hold down power consumption . . . for power already accounts for 10% of the average mill's product selling price.

Cities Service has the answer to both these requirements. Each of the seventeen specially tailored Cities Service Glade Oils have unsurpassed clearness and can actually reduce friction as much as 25%. In terms of mill profits, that's an added 2½%!

If you'd like to learn more of the many ways in which you profit with Cities Service Glade Oils, write Cities Service Oil Company, Sixty Wall Tower, New York 5, N. Y.

CITIES SERVICE

QUALITY PETROLEUM PRODUCTS

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NEW DYES and CHEMICALS

Vat Dye

Leucosol Black G Double Paste . . . an anthraquinone vat dye suitable for dyeing or printing cotton or rayon; produces blacks of outstanding light fastness and good fastness to crocking or mark-off. E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.

Circle D-1 on Reader-Service Card

Acrylic-Fiber Dye

Sevron Brilliant Red B . . . dyes Orlon Types 39 and 42 bluish red. The dyeings build up well and have good fastness to light and wet processing. The color is suitable for Orlon-wool or Orlon-rayon blends because its staining effect is negligible. E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.

Circle D-2 on Reader-Service Card

Textile Softener

Cyanatex SB-100 . . . gives softness and lubricity to cellulosic and synthetic fibers without yellowing. Compatible with anionic and nonionic finishing materials, the product exhibits little condensation effect on tenter and looper housings. Small quantities are very effective. American Cyanamid Co., Bound Brook, N. J.

Circle D-3 on Reader-Service Card

Metallized Dye

Lanasyn Red 2GL Pat. . . . a homogeneous metallized dye for wool, silk, and nylon, produces yellowish-red shades of excellent fastness to light and milling. Suitable for vigoureux printing and for dyeing tippy wool. Sandoz Chemical Works, 61-63 Van Dam St., New York 13, N. Y.

Circle D-4 on Reader-Service Card

Disperse Dyes

Artisil Scarlet GFL Ultradispersed . . . produces brilliant yellowish scarlets on acetate fabrics. Fastness to light, washing, gas fading, and sublimation is excellent. The color is also suitable for nylon and Arnel.

Circle D-5 on Reader-Service Card

Artisil Direct Blue Green . . . especially recommended for nylon fabrics to be heat treated. This dye produces greens and turquoise shades that are fast to salt water, perspiration, and crocking. Sandoz Chemical Works, 61-63 Van Dam St., New York 13, N. Y.

Circle D-6 on Reader-Service Card

Organic Coating

Pliovic AO . . . is an organosol formulation recommended for coating cotton or nylon webbing fabrics such as go into safety belts. High abrasion resistance, flexibility, and light resistance are characteristic of the coating. Application is by dipping or through conventional coating machines. Goodyear Tire & Rubber Co., Chemical Div., Akron, Ohio.

Circle D-7 on Reader-Service Card

New Dyestuff Class

Procion Dyes . . . in golden-yellow, brilliant-red, and bright-blue shades will be available shortly. Applicable to cellulosic fibers, nylon, silk, or wool, the colors are claimed to be suitable to producing extremely fast shades by modern printing and continuous-dyeing processes. Arnold, Hoffman & Co., Providence, R. I.

Circle D-8 on Reader-Service Card

Stabilizing Resin

Hartoset E . . . low-polymeric resin of the modified-urea type, is suggested for producing shrinkproof and crease-proof finishes on cottons, rayons, acetates, and synthetics. Storage life and bath stability are good, and the product is compatible with many other finishing materials. Hart Products Corp., 1440 Broadway, New York, N. Y.

Circle D-9 on Reader-Service Card

Scouring Agent

Dextrol Scour 50-17 . . . for scouring nylon and acetate tricot fabrics. The product is an emulsified solvent combined with wetting agents and detergents. Nonfoaming characteristics make it particularly suitable for pressure-dyeing machines. Dexter Chemical Co., 819 Edgewater Rd., New York 59, N. Y.

Circle D-10 on Reader-Service Card

Pigment Binder

Pliolite Latex . . . a styrene-butadiene polymer that binds inorganic pigments to paper leno fabrics produces superior wet strength, reduced color rub-off, and improved light-ageing of color. Chemical Div., Goodyear Tire & Rubber Co., Akron, Ohio.

Circle D-11 on Reader-Service Card

Product Prevents Resin Build-up

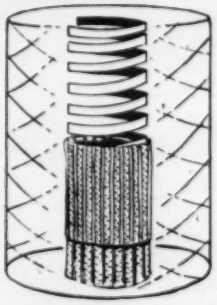
An aerosol solution of a silicone-tung-oil product originally designed for waterproofing textiles is being successfully used to produce a light non-adhesive coating on dry cans, calender rolls, embossing-machine rolls, and tenter-frame pins.

The product, which is called Water Skipper, is sprayed on the surfaces to be protected from resin build-up. Pressurized containers in 12-oz. and 3-lb. sizes are available, or the product may be bought in bulk.

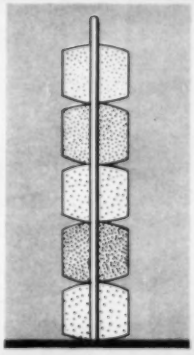
Frequent applications of a light coating of the material are claimed to cut down cleaning of cans or tenter chains by 50 to 60%. Because the film is extremely thin, there is little or no loss of heat transfer; and equipment can be treated right on the job without dismantling.

The manufacturer is Textile Adjuncts Corp., 876 Pacific St., Brooklyn 32, N. Y.

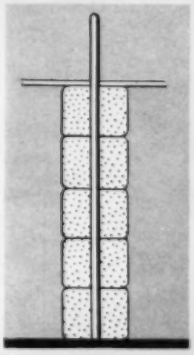
A Message to the Tufted Textiles Industry



X-ray view of Franklin Package showing compressible spring



(Left) Franklin Packages before compression — Note variation in density



(Right) Franklin Packages after compression — Note uniform density

IS YOUR YARN JUST "PACKAGE DYED"?

OR IS IT Franklin Process Dyed?

1. **VARIATION IN DENSITY** — When winding dye packages on a commercial basis, density is bound to vary from one package to another.

2. **VARIATION IN SHADE** — These variations in density will cause variations in shade.

3. **EQUALIZED DENSITY** — Franklin Process Compressible Package Dyeing is the only package dyeing method whereby density of all packages in a machine can be equalized (see diagram).

4. **UNIFORM SHADE** — Exceptional uniformity of shade in Franklin Process dye batches is a logical result.

5. **UP TO 33,000 LBS.** of ply yarn is one perfectly blended shade, put up on jumbo cones, if desired.

6. **MAN-MADE FIBRES** — We dye spun rayon (for tweed carpeting), as well as cotton and worsted.

Order Franklin Process Colored Yarns. Get the best in dyeing, a yarn that meets your specifications and service that is "conveniently yours" from any one or all of 5 dye plants.

Franklin Process

Yarn Merchants and Largest Package Dyers in the World — Dyeing Exclusively on the Franklin Spring

PROVIDENCE • PHILADELPHIA • GREENVILLE • CHATTANOOGA • FINGERVILLE, S. C.
New York Representative — 40 Worth Street

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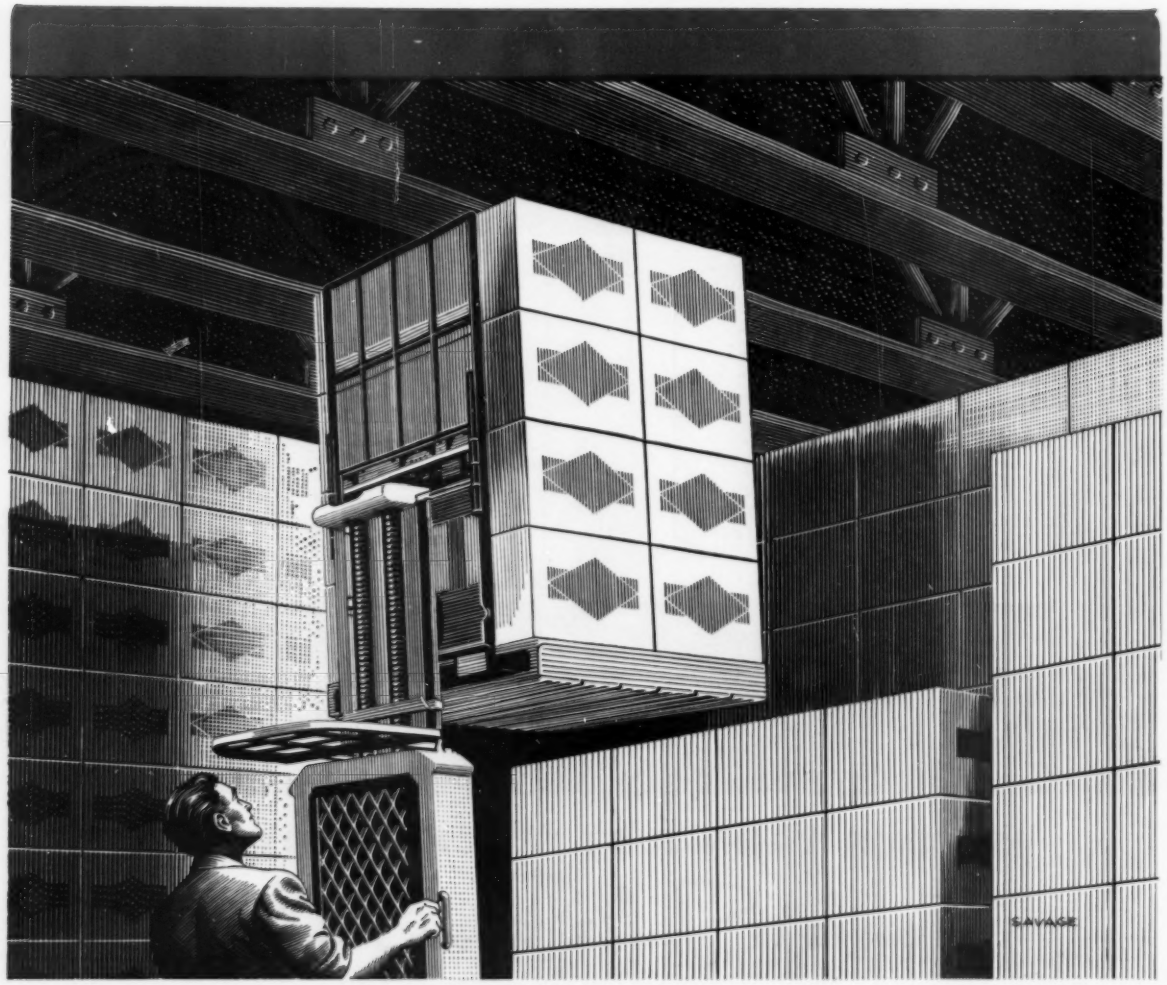


MAKE USE OF YOUR AIR-RIGHTS

Gaylord Boxes

Open space under your warehouse roof may be clear profit... if you can utilize it by stacking boxes taller. But, before you do, be sure your boxes will stand straight and strong under the increased load. Gaylord containers have this valuable "stack-ability" because they are precision built of the finest quality materials.

For information on containers to help you make full use of all your storage space, call your nearby Gaylord office.

CORRUGATED AND SOLID FIBRE BOXES • FOLDING CARTONS • KRAFT PAPER AND SPECIALTIES • KRAFT BAGS AND SACKS

GAYLORD CONTAINER CORPORATION ★ ST. LOUIS

DIVISION OF CROWN ZELLERBACH CORPORATION

QUESTIONS and ANSWERS

Do you need help on a technical problem? TEXTILE WORLD is at your service in helping solve problems in yarn manufacturing, weaving, knitting, dyeing, finishing, and other textile operations. A large staff of mill men, consultants, and other experts are available for authoritative answers. Send your problem to the Editor, Questions and Answers, TEXTILE WORLD, 201 E. Coffee St., Greenville, S. C.

Tips To Prevent Stringy Stock

Technical Editor:

How can we prevent stringy and curled stock from our opening room? (9988)

Overloading of opening machinery is found to be a frequent cause of stringy stock. Recommended productions are:

Blending feeders, 400 lbs. per hr.
Vertical openers, 1,600 lbs. per hr.
Buckley openers, 1,600 lbs. per hr.

Increasing fan speeds on screen sections has been found effective in preventing curled stock. This increased speed draws the cotton through quicker and shortens the time in which the blades act on the cotton.

Close the setting of the combing roll to the pin apron on the opener feeder to prevent large lumps of cotton being delivered. Increased speed of the lifting apron will maintain the required amount of production.

Open bales 4 to 6 hrs. or more in advance of opening to permit the natural aerating and fluffing of the cotton. Damp or wet cotton will often cause stringy bunches. Bales that contain more than the normal amount of moisture should remain open and not used until they become conditioned to the room humidity.

Check Spindle Whorls To Reduce Yarn Slubs

Technical Editor:

We are bothered with small slubs in our fabrics that are made from cotton-covered rubber yarns. What can we do to reduce these slubs and get better-quality fabric? (9953)

These slubs are sometimes due to uneven spindle speeds caused by spindle whorls of various diameters. Smaller whorls have less surface than the larger whorls; and when they are in contact with the spindle belt, the belt is in greater danger of slipping. Such slipping will result in uneven twist, which causes the slub in the yarn.

Check to see that the spindle whorl is in proper contact with the spindle belt or the wrong spindle speed may result.

How To Calculate Knitting Production

Technical Editor:

Is it possible to calculate the production of a Scott & Williams rib-body machine? If so, how is it done? (9970)

Production on circular knitting machines can be calculated by weight or by length. Here's a formula you can use to calculate the length of fabric knitted per hour:

$$\text{Yards per hour} = \frac{F \times \text{Rpm.} \times 60 \times E}{C \times 36}$$

Where F = Feeds in operation
C = Courses per inch
E = Machine efficiency

For instance, if your machines have eight feeds, you are running them at 36 rpm., there are 24 courses per inch in the fabric, and the machine efficiency is 80%:

$$\text{Yards per hour} = \frac{8 \times 36 \times 60 \times 0.8}{24 \times 36}$$

$$= 16$$

Production is more often calculated by weight. Here's a formula to give you the weight of 1x1 or 2x2 rib cotton fabrics in pounds per hour:

$$\frac{F \times N \times S \times R \times 60 \times E}{36\ Y \times \times 840}$$

Where F = Feeds in operation
N = Number of cylinder needles
S = Length of the stitch in inches
Y = Yarn number

If the same machine above has 448 needles in the cylinder, the length of the dial-and-cylinder-needle stitch is 0.36 in., and your yarn is 12/1:

$$\text{Pounds per hour} = \frac{8 \times 480 \times 0.36 \times 36 \times 60 \times 0.8}{36 \times 12 \times 840}$$

$$= 6.58$$

To find the length of the stitch, unravel a complete course, measure it, and divide by the number of needles in the cylinder. Repeat this procedure on all feeds and calculate the average.

To find your machine efficiency, calculate the 100% production of the machine by leaving out the machine efficiency number in the calculation, and compare this figure with the actual production you are getting.

How To Check Variations In Nylon Dyeing

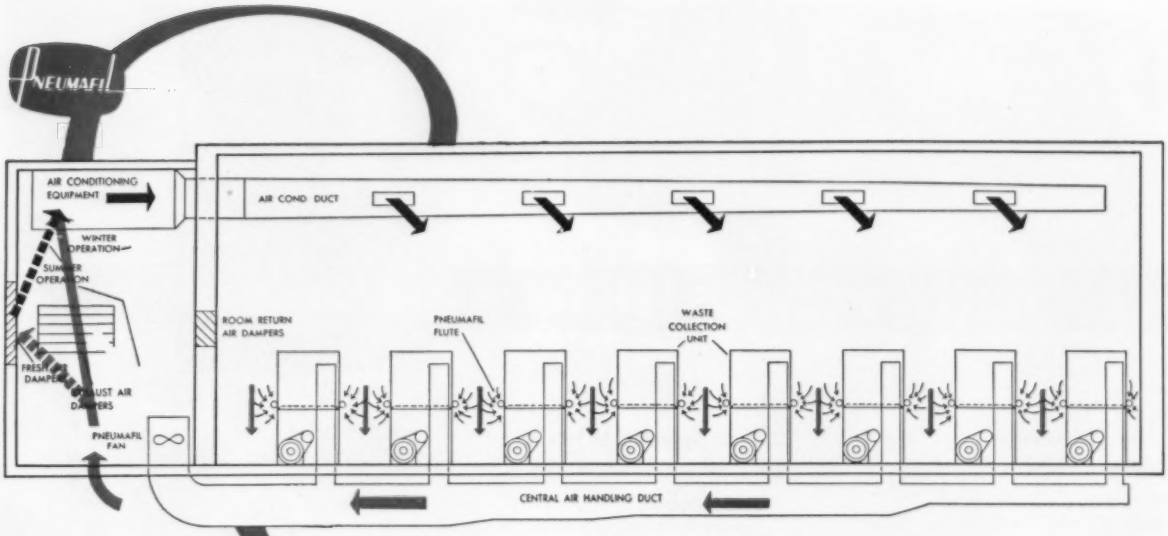
Technical Editor:

Is there a way we can check the variation in dye acceptability of nylon yarns? We occasionally run into stripes or filling bars in our dyed nylon-tricot fabric and are fairly sure that the yarn is varying in dyeability. (9986)

You can check variations in dye acceptance on nylon by dyeing the suspected yarns a gray shade made from the following dyes:

Calcocid Orange Y
Calcocid Alizarine Green G.N.
Calcocid Violet RNC

Vary the proportions to produce a warm gray shade. This shade with these dyes has proved to be very sensitive to variations in dye acceptability.



"Spun-In" humidity...

Increased spinner assignments . . .
fewer slubs and gouts . . . no doublings . . .
reduced spinnable fiber waste . . . fewer ends down . . .
a result of . . .

PNEUMAFIL*

Central System Pneumafil* combines the advantages of regular Pneumafil* with controlled room air and humidity distribution. Waste collection units on each frame are connected by ductwork to centrally located fans and the "Pneumafil* air" is automatically exhausted outside or returned to the spinning room (or air conditioning plant) as conditions demand . . . resulting in . . . . . More even year round temperature . . . reduced cross air currents . . . ideal air distribution . . . uniform humidity.

Central System Pneumafil available in three types—

1. Central Air Handling —as illustrated above.
2. Central Material Recovery —automatically returns fiber to picker room.
3. Central PneumaKool —regular Central Air Handling plus spinning room motor heat exhaust.

Let us explain these three Central Systems to determine which will be most profitable for your mill.

PNEUMAFIL CORPORATION

CHARLOTTE 8, NORTH CAROLINA

Sales Offices: Atlanta, Georgia—Needham Heights, Massachusetts

*Reg. U.S. Pat. Off.
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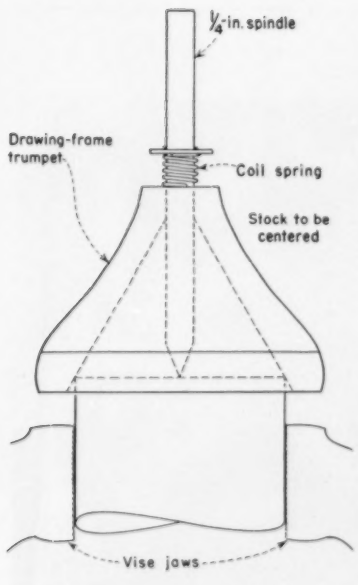
KINKS and SHORT-CUTS



Make a Centering Jig From Draw-Frame Trumpet

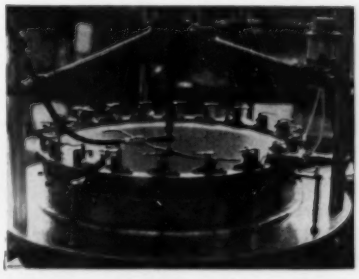
In our mill shop, we have many short lengths of cold-rolled, round steel stock to center-punch and center-drill for use in one of the departments of our print works. The diameter of the stock varies from $\frac{5}{8}$ in. to slightly more than 1 in.

The regular method of center punching required chalking the ends of the stock and then finding the center with a divider marker. Finding and prick-punching the exact centers for drilling took considerable time.

We devised a center-finder and punch from a discarded drawing-frame trumpet and a short length of an old spinning-frame spindle. The stock to be centered is placed in a vise, as illustrated, and the reamed-out end of the trumpet is placed over the end.

The punch, passing through the center hole of the trumpet and held in place by a spring, is placed in contact with the stock and tapped with a hammer. This action makes a punch mark on the stock in the exact center, and the stock is ready for drilling.

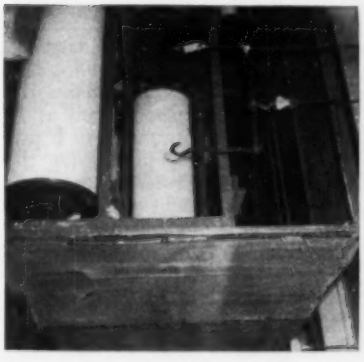
The opposite end of stock is punched in the same way. The center-finder and punch quickly and accurately center round stock with diameters from $\frac{1}{4}$ to $1\frac{1}{8}$ ins., a range of sizes that meets most of our requirements. (K-3035)



Garden Sprinkler Keeps Knitting Machines Clean

To keep excessive lint from collecting on the yarn guides and sinker rings of our circular knitting machines, we use a modified garden sprinkler. A copper tube, slightly bent, is inserted in each outlet of the sprinkler.

The unit is then attached to the machine frame over the center of the cylinder. The supply pipe is connected to the air compressor line and regulated to give about $\frac{5}{8}$ lb. pressure per square inch. The rotating copper tubes clean the sinkers and needles and save us considerable cleaning time. (K-3034) *A. Lichtig, London, England*



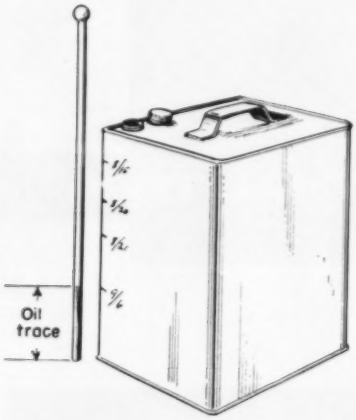
Plastic Cover on Rack Protects Section Beams

Lying out in the open, our section beams used to collect dirt and lint before they went to the slasher. We got around this difficulty by putting a plastic sheet over and around the rack where the beams are stored. A wooden frame around the edges of the rack is all that's required to hold the sheet. We reinforced the edges of the plastic where we tacked it to the wood. (K-2834) *Pepperell Mfg. Co.*

How To Protect Card Feed Rolls From Damage

Card feed rolls often are damaged or nicked when struck by the scavenger roll as it is being replaced after routine cleaning operations.

We eliminated damage to our feed rolls by placing a brass bushing over each end of the scavenger roll. The soft brass collar will not damage feed rolls if the tender accidentally hits them with the scavenger roll. (K-3019) *Fernando Gelinas, Quebec, Canada*



Best-Kink Award for June

Each month TEXTILE WORLD awards $25 to the submitter of the Kink judged by a panel of over 200 practical mill men as the best for that particular month. A new batch of Kinks appears each month, and a new group of readers acts as judges each month.

If you are asked to judge one of these days, be sure to help select the best Kink by sending back your answers in time for final tabulation. Closing date for judging is the last day of the month in which the Kink appears.

The best Kink for June, according to TEXTILE WORLD reader-judges, was:

"Thread-Cutter Knives Reduce Jerk-Backs"

By Charles Batzer, Lancaster, Pa.

Mr. Batzer is being sent a check for $25 with the compliments of TEXTILE WORLD

Mark Oil Cans To Prevent Running Dry

We use oil in our sizing and soaking compounds at irregular intervals. It used to be that very often we'd send to the supply room for a can of oil and discover that the can did not contain enough to meet requirements. Our mill is some distance away from a source of supply, and naturally this shortage caused inconvenience and annoyance.

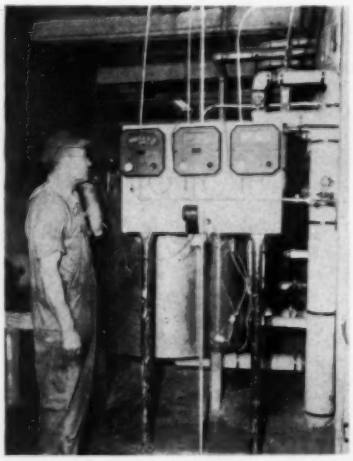
We overcame this problem by requiring the operator to measure the oil with a rod or stick after each use and then mark the depth of the oil and the date on the outside of the can with a piece of chalk. The date on the can is a check to make sure the operator does not forget to measure the oil. We have not run out of oil since we started marking the cans. (K-2849)

Hokao, Fukaya, Japan

Holes in Air Duct Give Better Control

We were bothered with varying humidity and temperature conditions in our knitting room that caused our fine-gauge knitting machines to give trouble. The draft from the air-conditioning ducts also caused the machine speed to fluctuate.

We solved the problem by drilling ¼-in. holes in the air-conditioning duct over the knitting machines. These holes, about 3 ins. apart, disperse the air more evenly and cut down on drafts. (K-3040)



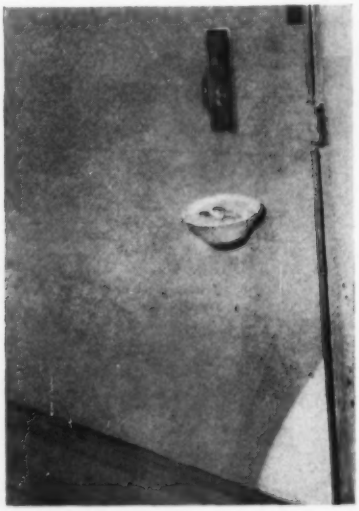
Telephone Aids Slashing

Our size-mixing room is in another department several yards from our slasher room. We used to lose a lot of time when a slasher operator had to talk with the size maker about a problem.

We have cut out lost time by installing an extension telephone between these two departments so that the operators can talk directly with each other. The telephone line is independent of the regular interdepartmental system. (K-3066)

$5 to $10 for any Kink accepted for publication. Each one will be entered in the $25 and $500 prizewinner contest.

Send in your Kink now.



Raised Cuspidors Reduce Mess on Floors

All mills have a tough time keeping tobacco-chewing operators from spitting on the floor and in the corners, and our mill is no exception. We tried the old method of painting the corners white to discourage spitting, but some operators considered the white corners to be a special target.

Finally, we attached sand-filled containers to the walls well above the floor in strategic places, such as in elevators. Apparently, there is a psychological resistance to spraying the walls at waist-high levels; there are no inhibitions about splashing the floor instead of the cuspidor. At any rate, whatever the reason, the operators seldom miss the raised containers, and our mill now is a much cleaner and pleasanter place to work. (K-3038)

their wrinkle resistance is the same with

RHONITE R-1

Ever see such look-alike dresses? But that's RHONITE R-1 for you . . . cottons, rayons, and blends wink at wrinkles with equal abandon whether it's the first wearing or last. One's a washer veteran, yet both dresses put on their partygoing look with the same quick swipe of an iron. Why are RHONITE R-1 finishes so durable? Perhaps because RHONITE R-1 is a modified urea formaldehyde, a monomeric product of such small molecular size that it penetrates and reacts inside the fibers.

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Rubber Bands Used To Identify Blends

Our mill runs a large number of different blends of synthetic and natural fibers at all times; and we used to have a problem keeping the lots straight, especially those with fibers that cannot be tinted.

We solved the problem by buying a supply of heavy rubber bands in different colors and using them around sliver cans to identify the contents. This practice has saved us many a headache. (K-2898) *Dover Mills Co., Shelby, N. C.*

Rack Stores Warp Neatly

The problem of storing drawn warps in our weave room has been solved with a homemade wooden rack made by our carpenters. The rack also reduces half the lifting.

The rack is built along one wall of the weave room and is out of the way of most traffic. Eyebolts with attached hooks 12 ins. long are bolted along the length of the rack.

When a drawn warp is brought to the weave room for storage, the warp hauler rolls the warp on a dolly under a hook and hangs the warp-beam journal in a hook.

Then when a beam is to be removed, the warp man rolls his dolly under the beam and lifts the beam only about 2 ins. to remove the warp. With this method, back injuries are reduced. (K-3067)

Don't Let Broken Needles Ruin Your Shear Blades

When an occasional broken needle went through the finishing processes as far as the shearing operation, the needle would play havoc with the shearing-machine blades. A new blade usually would have to be installed, and the machine would be out of commission for some time.

We've saved quite a bit of money by fitting an electronic metal detector to the feed end of the shear. The detector stretches across the fabric face and stops the machine if pieces of metal pass the detector. (K-2996)

Drill an Air Vent For Cork Friction Inserts

When new corks are inserted in solid loom friction plates, the corks sometimes become loose after the loom has been in operation a short time. Air trapped behind the cork inserts prevents a good bond between the cork and the metal.

A small hole drilled in the cork will let the air escape and a close bond can be obtained. Better still, a small hole drilled through each depression in the friction plate will do the job without weakening the cork inserts. (K-2993) *Chas. S. Bicksler, Lancaster, Pa.*

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What Is a Kink?

Any idea that will

- Cut costs
- Improve quality
- Reduce work
- Increase production
- Make work easier

The idea may be one for improving machines, some attachment for a machine, a short-cut way of doing something, a labor-saving device—any idea at all that helps a mill man run his job better or easier.

Send in your Kink now. There is always a contest going on.

RULES OF CONTEST

1. No limit to number of entries.
2. New $25 prize contest every month, $500 prize contest for the year. Monthly contest confined to Kinks published that month, yearly to those published in calendar year 1956.
3. All Kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to Kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 200 will be asked to select preferred Kinks in each issue. Their votes will select the best Kinks, and their decision will be final. In cases of ties, duplicate prizes will be awarded.

Send Kinks to:
KINKS CONTEST, TEXTILE WORLD
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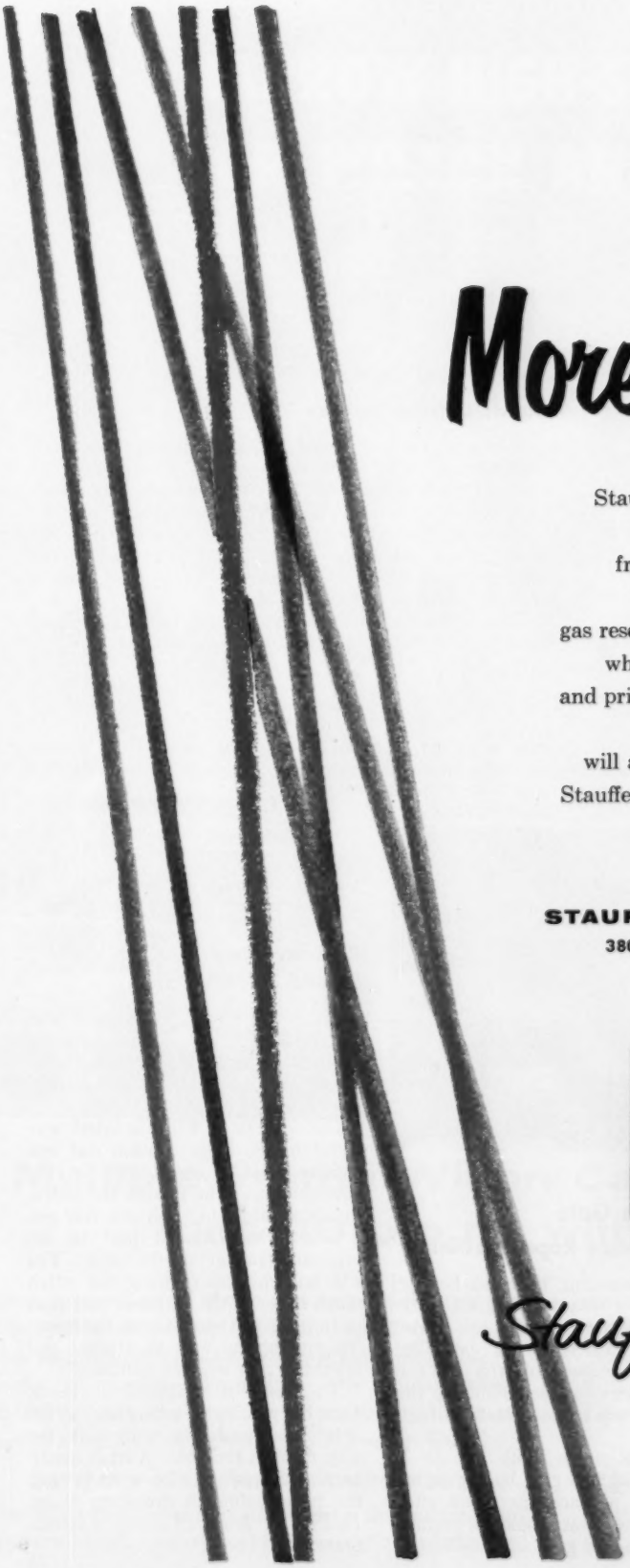

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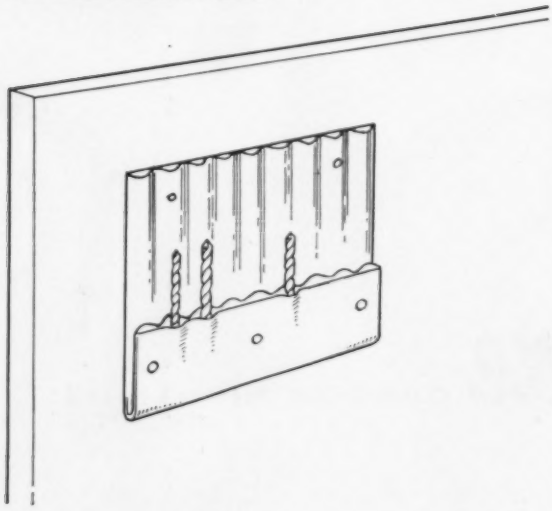
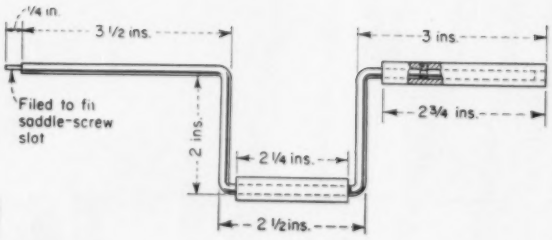


Corrugated Board Used To Make a Drill Holder

A handy holder for small drills can be made from a piece of corrugated cardboard tacked to the back of the work table or to the wall. The cardboard is doubled at one end to form pockets for the drills and is tacked as shown in the sketch. (K-2956)

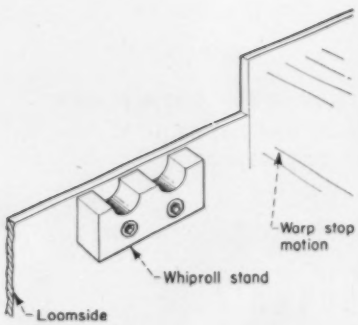


Special Tool Tightens Saddle-Stirrup Screws

We used to find it awkward and fatiguing to adjust saddle-stirrup screws on our spinning frames with an ordinary screw driver, and we could not locate a crank-type brace that was just the right shape and size.

To solve the problem, we made a special tool, illustrated, from old Barber-Colman pull wires and an oil tube from an intermediate gear bearing. Any kind of suitable wire and tubing can be used.

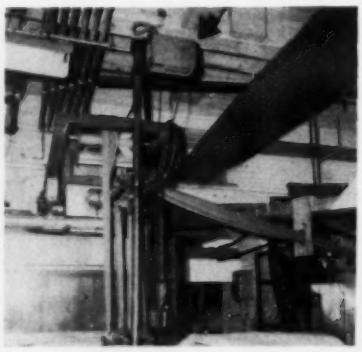
The tool works fine and has lowered our maintenance costs. (K-2999) *L. S. Medeiros, Somerset, Mass.*



Protect Whiprolls by Placing Them on Stands

The whiprolls are usually removed from the whiproll bearings and placed on the floor when warps are changed at the loom. Our whiprolls were becoming scarred and rough from this practice. Also, the whiprolls lying on the floor created a safety hazard.

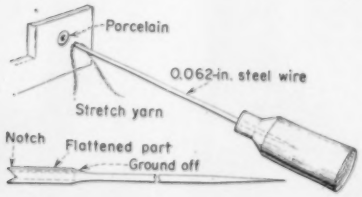
Inexpensive, foundry-molded stands were mounted at each end of the loom just behind the warp stop motion. When the warp is out, the whiproll is placed on these stands so that it is out of the way of the employees and does not become damaged. (K-2976) *Bernard Dixon, Providence, N. C.*



Multipass Gate Synchronizes Rope Washers

A compensating gate can be used to actuate a rheostat that varies the current to one motor of a pair driving two rope washers. The gate illustrated was designed to carry fabric in a sort of block-and-tackle hookup that cuts down any tendency toward hunting.

Twice as much cloth has to be taken out of this gate by the second washer to produce the same effect on the rheostat as would be required by a single-pass gate. (K-2989)



An Easy Way To Thread Stretch Yarn

We found stretch yarns more difficult to thread than normal yarns; so we built an instrument to allow us to thread our porcelains very quickly. Here's how to make it:

Cut a piece of 0.062-in. steel wire about 6 ins. long. Flatten out one end and file a small notch in the flattened end. The smaller the notch, the better threading job you will get.

Grind the flattened part to the original diameter of the wire. You will find the job of filing the notch much easier in the flattened part than in the original wire. Grind the opposite end of the wire to a point and mount it in a wooden handle.

To thread a porcelain or guide, place the yarn (with a long tail) in the notch and push the wire with the yarn through the hole. A latch needle or similar hook can be used to grab the yarn at difficult threading places. (K-2947) *James Lavoie, Chelsea, Que.*

A·S·R

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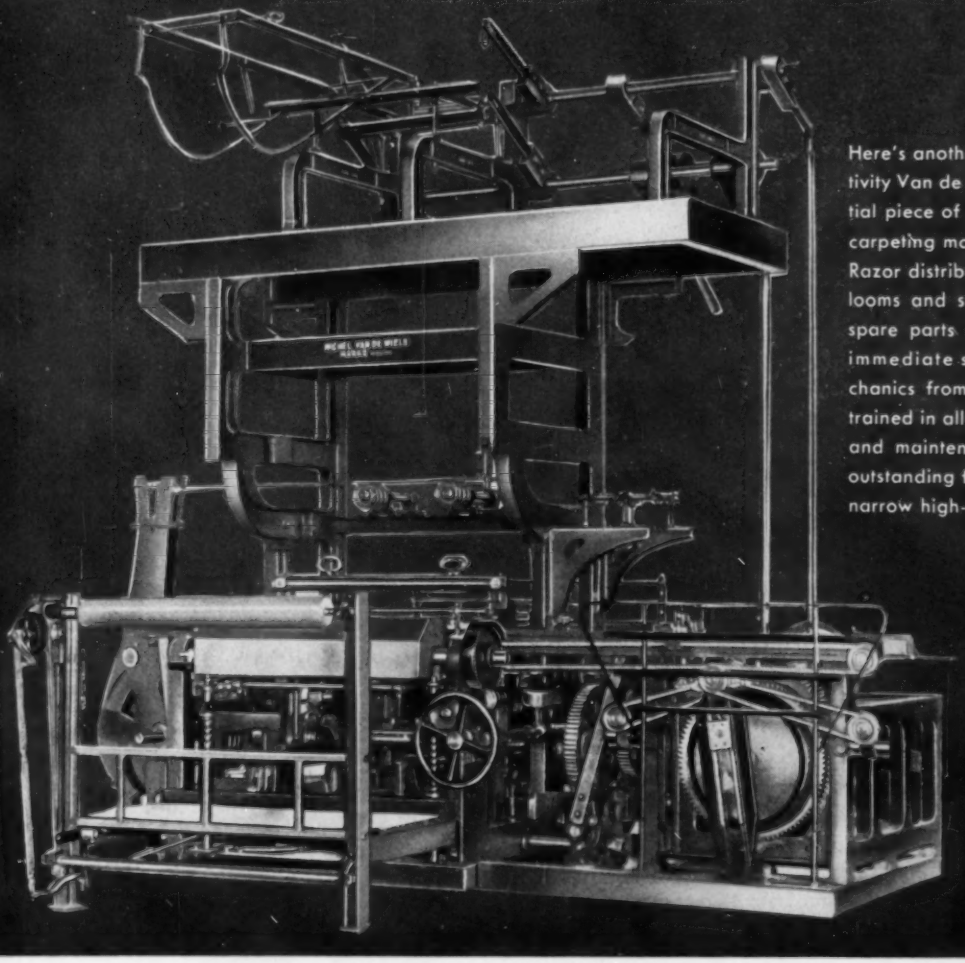
NARROW HIGH-SPEED CARPET LOOM FOR WILTON AND VELVET CARPETS



Here's another in the family of high-productivity Van de Wiele carpet looms—an essential piece of equipment for making contract carpeting more profitable. American Safety Razor distributes, installs and services these looms and stocks a complete inventory of spare parts in the United States to insure immediate shipment. Engineers and mechanics from A.S.R. have been thoroughly trained in all phases of the looms' operation and maintenance. Below are some of the outstanding features of Van de Wiele's new narrow high-speed carpet loom:

Multiple Frame Wilton Carpet Loom runs 110 p.p.m. with double beat!

Ideal for production of contract carpets! There's new, improved wire motion for high, trouble-free speeds. New picking motion for a strong, smooth pick. Rugged, heavy construction throughout. The ¾ loom weighs 15,000 lbs., and there are heavy-duty roller or ball bearings at all critical points. All gears have cut teeth.

FORWARD AND REVERSE INCHING MOTION

The Allen-Bradley electrical system is the machine-tool type with both forward and reverse inching motion and electrically controlled banging-off motion. One-shot lubrication to all main bearings. Direct drive by electric motor through V-belts to friction pulley. No clutch! All nuts, bolts and screws are American National Standard. Looms can be delivered in 27", 36", 54" and 72" widths.

• • •

FOR FURTHER INFORMATION, write to: Industrial Products Division, American Safety Razor Corporation, Staunton, Virginia.

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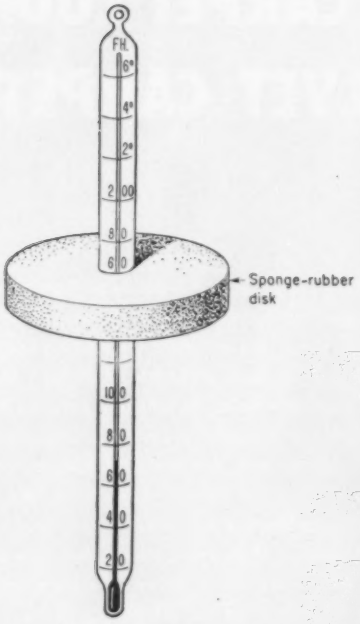
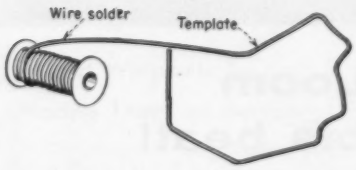


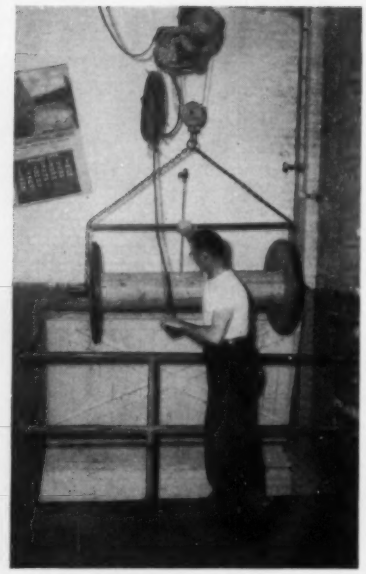
Protect Your Thermometer With Sponge Rubber

To reduce breakage of glass dyehouse thermometers, cut a disk of sponge rubber 2 to 3 ins. in diameter, punch a hole in the center, and slip the disk on the thermometer. The disk will prevent a lot of breakage that occurs from rough handling and accidental dropping; and the thermometer will float upright in a dyebath. (K-2984) *H. J. Haas, Martinsburg, W. Va.*



How To Make a Template From Wire Solder

It is sometimes necessary to cut a repair part for a machine, and a template is needed. Bend a stiff, solid-center solder wire to shape for an outline of the piece to be cut. Then mark the metal plate, using the wire template as a guide, and a close fit can be obtained. (K-2960)



This Trap Door Reduces Labor Cost

We used to haul our warp beams on a truck from the warpers onto an elevator that took them down one floor to the slasher room. The procedure was reversed for the empty beams coming upstairs.

We saved the labor of one man by cutting a trap door through the floor and installing a lift hoist to transport the beams to and from the slasher room.

In the slasher room, we built a three-tier storage rack with the top two rails slanted toward the slashers. This arrangement permits the full beams to roll automatically to a point where another hoist lifts them directly from the rack to the slasher.

The lower rail is slanted in the opposite direction so that empty beams roll back beneath the trap door for easy lifting to the warper room on the second floor. (K-2970)

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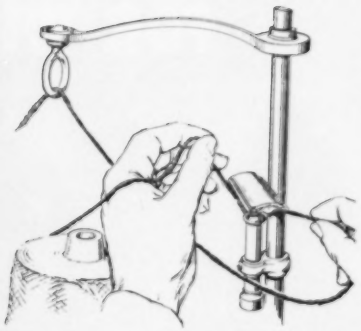
Send in your Kink now.



Make Neater Knots On Stretch Yarns

When knots are tied on stretch yarns and stretch combination yarns, the tail ends are difficult to break. As these yarns usually go into high-class goods, the long tail is objectionable if it is left. Some operators carry a pair of scissors to cut off the tails, but you can fix a gadget on your machines that is much quicker than scissors.

Attach an old safety razor to an upright stand near the yarn on the machine yarn stand. Grind out the center protector spur of the razor to allow for more cutting space.

When the knots are tied, use a long tail and cut the ends over the razor. This method is quicker than using scissors and will pay off in better quality. (K-2915) *H. J. Haas, Martinsburg, W. Va.*

Easy Way To Change Lift Racks on Roving Frames

Our fixers used to spend 4 to 5 hrs. changing the lift racks on roving frames because all the gears on the shaft had to be removed. Frequently, the gears were damaged during the operation and had to be replaced.

We cut the time for changing lift racks to 15 mins. by splitting the rack down the middle and putting it together again with pins and a bolt in each end. This simple operation sure saved us a lot of manhours. (K-2991) *Harley Walker, Lenoir, N. C.*

Now there's a better way to carry

textile fibers

to market

Here is a MICARTA® shipping bobbin developed especially to withstand the squeeze of tightly wound textile fibers. Currently in use by one of the world's largest textile producers for the shipment of textile fiber, this new bobbin is proving itself ideal in a punishing application. Its remarkably high resistance to compression, impact and moisture absorption is seeing it through a record-breaking number of round trips from plant to converter without damage to bobbin or fiber.

Let us show you how this amazing new MICARTA bobbin can perform for you. Write Westinghouse Electric Corporation, MICARTA Division, Hampton, South Carolina. J-06609

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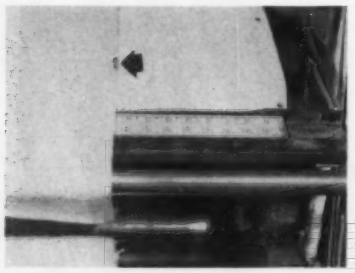
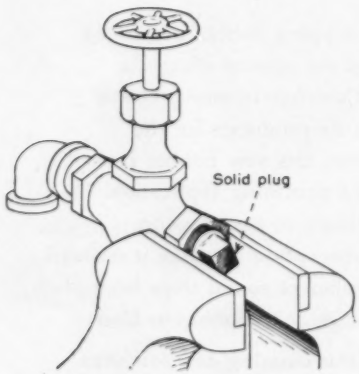


Colored Tape on Cloth Marks Shift Changes

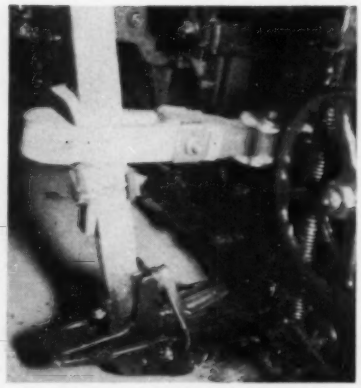
On our dope-dyed fabrics, we can't stamp the cloth edges for shift changes because the stamp marks cannot be removed. Instead, we use colored cellophane tape (arrow) to mark the changes. Red is for the first shift, blue is for the second, and green is for the third.

When the first shift is leaving the job and the second shift is coming to work, a 1-in. strip of red tape is stuck to the right-hand selvage. Joining the red tape, a 1-in. strip of blue tape is stuck to the cloth toward the reed. The tape is easily removed, and the cloth is graded accurately. (K-3064)



Protect Fittings From Vise-Jaw Pressure

Many a good valve or pipe fitting has been ruined in a vice by excessive pressure. To eliminate such waste, simply screw a solid plug into the fitting before tightening it in the vise. The plug will retain the shape of the fitting regardless of the pressure. (K-2836) *Charles H. Willey, Penacook, N. H.*



We Stop Shuttle Marks With a Strap and Spring

Shuttle marks often appear in loom-finished taffeta fabrics even when the loom lay is aligned correctly and all picking-motion parts are set right. But a couple of years ago, we hit on an easy way to stop most of the shuttle marks made on our Draper XD looms.

To stop the shuttle marks, we use a leather strap and spiral spring fastened around the parallel motion of the loom. The leather strap is a complete lay-end strap, which has a ¼-in. hole punched near each end. The spiral spring is 3 ins. long and ⅜ in. in diameter with a hook at each end.

To put the strap-spring attachment on a loom, we: (1) hook one end of the spring in one end of the strap, (2) run the spring under the parallel between the picker stick and the spring shell, (3) place the center of the strap over the adjusting screw in the parallel shoe, and (4) hook the other end of the spring in the other end of the strap. Then the attachment is complete.

We have one of the assemblies on each end of all our looms. In addition to reducing shuttle marks, the assemblies result in fewer broken warp ends and filling and give better over-all control of the shuttle. (K-2975) *W. H. Ballard, Altoona, Pa.*

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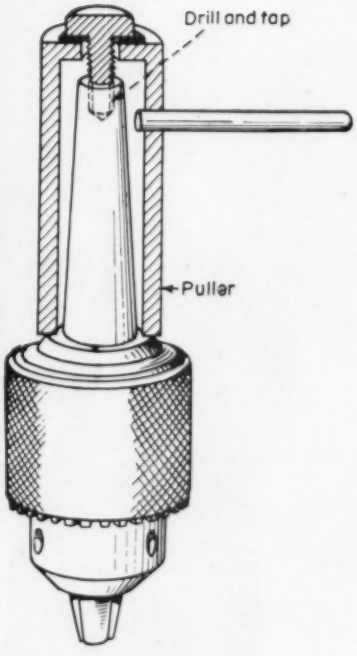


How To Remove A Drill-Chuck Arbor

Here's an easy way to remove the tapered shank of a drill-press chuck.

Make a cylindrical puller with a bore through the top and sides. Drill and tap the end of the shank. Then put the puller over the arbor, and insert an extracting bolt through the hole in the puller into the tapped hole in the shank. Next, put a small rod through the hole in the side of the puller, hold the rod to keep the whole unit from turning, and tighten the bolt to remove the arbor.

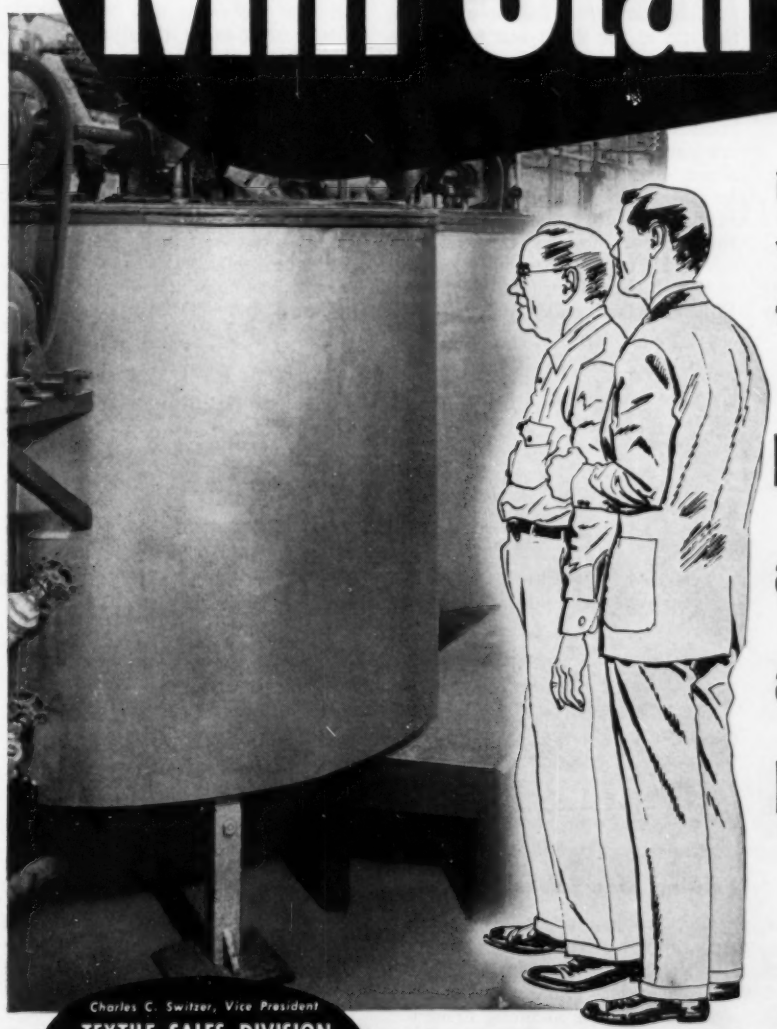
Tapping the bolt heads lightly will make removal easier. (K-2835) *Charles H. Willey, Penacook, N. H.*

Use an Emery Stick For Shuttle Maintenance

Sometimes it is difficult to reach parts of a shuttle with ordinary emery cloth or sandpaper. An emery stick is a useful tool for such work, especially for removing splinters and rough edges from the shuttle-eye cavities. The emery stick can be used edgewise or flatwise, and some of the flexible types can be slightly rolled to better reach the difficult places. (K-2961) *Bob Abbott, Berwick, Pa.*

VICTOR Mill Starch

A KEESTAR PRODUCT



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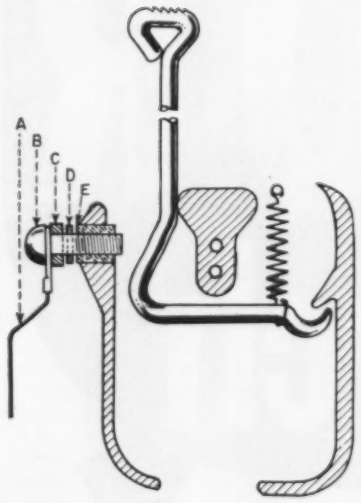


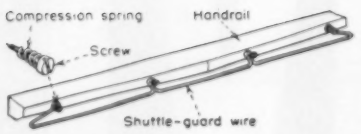
Convert a Midget Feeler To an Electric Feeler

Here's how to convert a midget filling feeler to an electric feeler by adding just a few extra parts.

Enlarge the hole in the side of the case that normally holds the connecting rod. Screw a ¼-in. nut *C* on a ¼x1-in. round-head bolt *B*, and fit a fiber washer *D* against the nut. Press-fit a ⅜-in. fiber bushing *E* on the bolt; then press this assembly into the enlarged connecting-rod hole in the feeler case. Place the feeler case on the stand in an inverted position.

Connect wire *C*, fitted between the bolt head and the nut, to a switch on an electromagnetic shunt box similar to the box used for the electric warp stop motion. Attach an adjustable connecting rod or wire from the arm of the shunt box to the lifting lever.

When the filling in the shuttle is exhausted, the feeler blade will make contact with the end of the bolt and complete an electrical circuit to the shunt box. The shunt-box arm will be raised, which in turn will raise the lifting lever into contact position with the filling-cam-follower tip. The transfer of filling will then be completed in the usual manner. (K-2953) *Jimmy Phillaw. Martinsville. Va.*

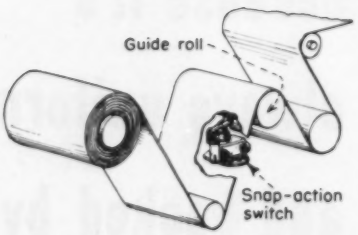


Use Springs To Prevent Shuttle-Guard Damage

On high-speed looms, vibration at the beat-up loosens the screws that hold the shuttle-guard wire to the handrail. Then the screws wear thin and break off or wear the guard wire in two pieces. The broken screw heads fall into the warps and make breakouts or cause other damage.

To lessen this trouble, we remove all the short screws from the handrail and replace them with longer ones of the same diameter. Before we put in the longer screws, we put a small compression spring next to the head of each screw.

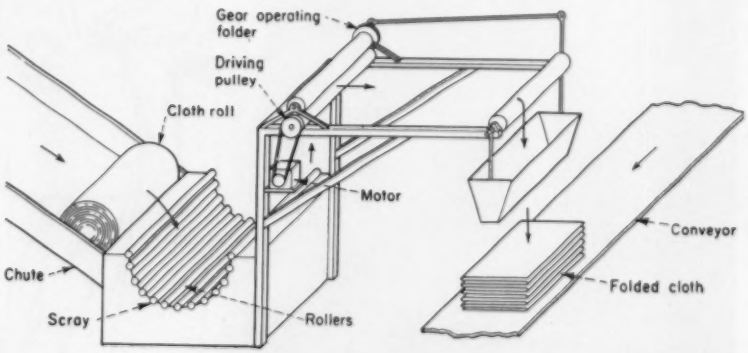
The spring prevents the constant vibration that loosens the screws. Now the shuttle-guard wires last for years without trouble. (K-2844) *H. E. Wenrich, Berwick, Pa.*



Switch Prevents Wrap-ups

Slip-type take-up clutches on cloth batchers sometimes fail to carry the load if the operator forgets to adjust the clutch for the added weight as a roll builds up.

To avoid wrap-ups on a cloth shear, tenter, padder, or similar machine, install a small snap-action switch, as shown, and hook into the motor-starting circuit. Then, if the batcher fails and the cloth becomes slack or starts to wrap around the guide roll, the action will actuate the switch and shut down the machine. *Micro-tips.*



Folding Idea Saves Time and Money

Our problem was to convert large rolls of cloth from the mending room into a folded state to be delivered to the dyehouse. Our rolls slide down a chute from the mending room into a scray.

The cloth is then fed through a pair of rollers on a framework erected on the side of the scray. The bottom roller is driven from a ½-hp. motor fastened to the frame. The fabric goes over a loose roller into a bucket plaiter, which drops the fabric in loose form onto a conveyor.

When all the cloth is off the roll, the conveyor is started and the fabric moves to the dyehouse on the conveyor. (K-2967)

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You ought to have a copy of our PUBLICATION LIST

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Ten-O-Film has the stability and ease of removal necessary for spun synthetic yarns and blends, for combed cotton yarns and for worsteds.

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TEXTILE WORLD, A McGraw-Hill Publication, New York 36, N. Y. August, 1956

Outstanding NEW LITERATURE
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NO REPEATS . . . Listed here for August are current bulletins reviewed by the editors of TEXTILE WORLD. To get the one you need, circle the number on the Reader-Service card, as described on the preceding page.

TEXTILE MACHINERY and AUXILIARY EQUIPMENT

Cone and tube winders—High-speed models producing large packages. Bulletins A-98A, A-99, and B-46A from Foster Machine Co. (F-1)

Textile dryers—For slashers, tenters, loopers, curing ovens. Bulletin 31 from J. O. Ross Engineering Corp. (F-2)

Change-over parts—For Saco-Lowell drawing frames. Catalog from Ideal Industries, Inc. (F-3)

Variable-speed drives—Infinitely variable speeds obtained from unit described in Form 3547. Cleveland Worm & Gear Co. (F-4)

Spinning-frame cleaner — Ceilings, floors, machine cleaned by automatic traveling cleaner. American MonoRail Co. (F-5)

Pigment-liquid dispersers—For preparing print pastes, latices, finishes. Bulletin SMD-55. Manton Gaulin Mfg. Co., Inc. (F-6)

Let-off motion—Eliminates weights, provides even warp tension on all looms. Steel Heddle Mfg. Co. (F-7)

Counters — Stroke and revolution counters for many industrial applications. Cat. M200. Production Instrument Co. (F-8)

Cloth expanders — Rubber-covered bowed rolls available to 320 ins. long, for textile processing. Mount Hope Machinery Co. (F-9)

Teflon—Fabricated parts, sheets, tapes for electrical, textile purposes. Cat. T-55. Continental-Diamond Fibre Div., Budd Co., Inc. (F-10)

Spinning-frame cleaner — Double-suction model for woolen frames described in folder from Thoma Co. (F-11)

Pick counters—Several types of industrial counters, including a model with printing device. Stellite American Corp. (F-12)

SUPPLIES & CHEMICALS

Chlorine—Its history and use in industry described in 96-page book from Wyandotte Chemicals Corp. (F-13)

Rubber Developments—Vol. 9, No. 1, contains rubber applications, patent digest, from Natural Rubber Bureau (F-14)

Proper lubrication—Discussed in Lubriplate Data Book 56-1. Greases, oils, for all types of machinery. Fiske Bros. Refining Co. (F-15)

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NEW LITERATURE Continued

Hydrogen peroxide—Uses, properties, how to handle safely, described in booklet from Solvay Process Div., Allied Chemical & Dye Corp. (F-16)

Peroxygen chemicals — General procedures for utilizing hydrogen peroxide and ammonium persulfate in vat and sulfur dyeing. Bulletin 75. Becco Chemical Div., Food Machinery & Chemical Corp. (F-17)

Molded products — Phenolic-resin gears, loom parts described in Cat. C-56 from Continental-Diamond Fibre Div., Budd Co., Inc. (F-18)

Paraformaldehyde — Properties and uses described in a bulletin from Heyden Chemical Corp. (F-19)

Chemical catalog—Lists 7,300 chemicals for all purposes and includes handy reference data. Fisher Scientific Co. (F-20)

Loom supplies—Special products made for looms described in leaflet IND-787 from Armstrong Cork Co., Ind. Div. (F-21)

All-purpose absorbent—For many industrial purposes; 101 uses described in Bulletin SD-2 from Speedi-Dri Corp. (F-22)

MAINTENANCE & ENGINEERING

Centralized lubrication — Eliminates multistation oiling on machines through central mechanism. Farval Corp. (F-23)

Corrosion-resistant pipe—For conveying many corrosive materials at moderate temperatures. Fittings available. Corning Glass Works (F-24)

Tachometers—Portable and stationary models, revolution counters, surface-speed indicators. Bulletin 1048. Herman H. Sticht Co., Inc. (F-25)

Machine mounts—For reducing vibration; carry 400 to 6,000 lbs. per sq. ft. Cat. 1S-55. T. R. Finn & Co., Industrial Div. (F-26)

Temperature control—For knitting machines. Maintains proper relation between bed and narrowing points. Data Sheet 8-1-39. Minneapolis-Honeywell Regulator Co., Industrial Div. (F-27)

Solid-film lubrication—For difficult lubrication problems at very low or high temperatures and high speeds. Brochure 3-B. Electrofilm, Inc. (F-28)

Flow meters—Mechanically operated meters for fluid-flow measurement at varying rates. Spec. sheet 242-2, Minneapolis-Honeywell Regulator Co., Industrial Div. (F-29)

Increase spinning efficiency and frame flexibility

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Fast, easy adjustment!

For *exact* cylinder speed regulation—from 500 to 1450 rpm—simply turn shifting screw with wrench . . . *with frame in operation!* Get the required speed—in seconds!

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Optimum spinning efficiency demands the highest front roll rpm that will maintain acceptable yarn quality (ends down) and constant work loads (sides per spinner.) REEVES Vari-Spin permits speed adjustments —while the frame is running—to compensate for variations in humidity and roving quality.

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Maximum frame utility requires drive flexibility for today's yarn count and fiber blend changes, as well as future traveler and ring improvements. With almost 3 to 1 speed range, the rugged and reliable REEVES Vari-Spin permanently reduces wasted fixer hours and frame down time.

Get the story on "Mill Proved" Vari-Spin from your REEVES representative, or write for folder W22b-G561

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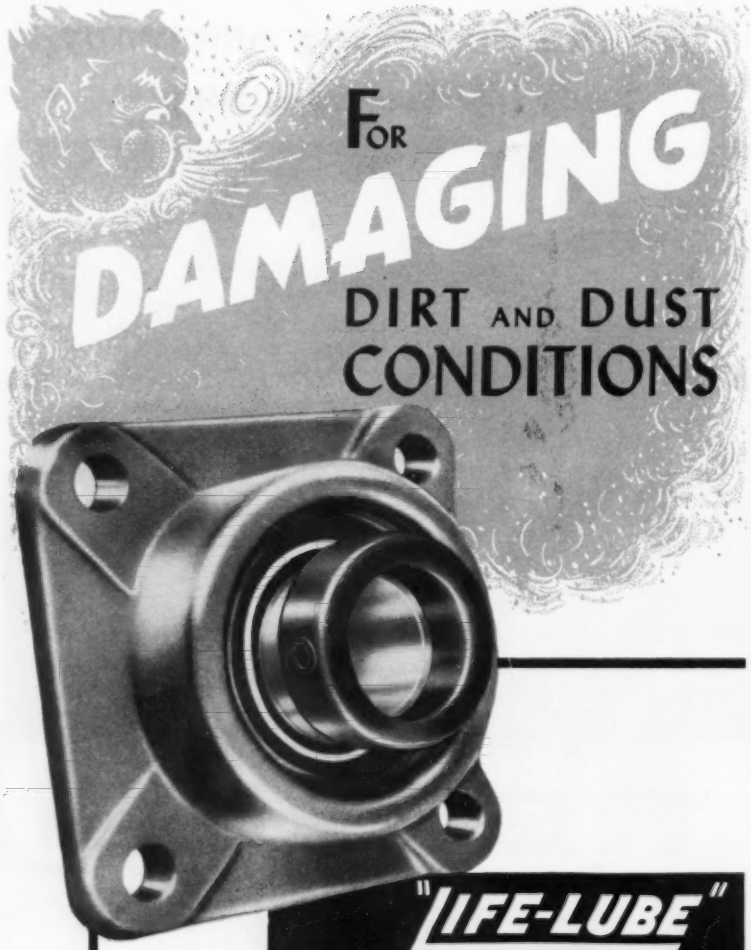

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These bearings are of modern design, able to withstand substantial thrust and radial load, at high speeds. Bearings are MRC standard 200 series with wide, deep groove inner race.

Life-Lube flange units are available in sizes from ½" to 2 15/16". Write for further information, or consult your Woods' Industrial Distributor.

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NEW LITERATURE Continued

Industrial blowers—Packaged units, others, in wide range of types and capacities, described in Bulletin 5306. American Blower Corp. (F-30)

Filters—For water and chemical purification; removable filter leaves, quick-opening covers. Industrial Filter & Pump Co. (F-31)

Corrosion-resistant paint—For plant maintenance under corrosive conditions. Bulletin 701. Carboline Co. (F-32)

Adjustable unions—For hooking up misaligned vessel tappings. Compensates for up to 10° misalignment. Jergusen Gage & Valve Co. (F-33)

Arc-welding procedures — Summarized on technical data card 155A. Babcock & Wilcox Co., Tubular Products Div. (F-34)

Water treatment—Chemical treatment of water for clarification, reuse. Basic methods outlined in TR T-138. Graver Water Conditioning Co. (F-35)

Floor scrubbers—Complete units that wet, scrub, and remove excess water from floors. Supplies, accessories. Finneil System, Inc. (F-36)

Air diffusers—Ceiling-mounted units adjustable to best performance at varying heights. Cat. F-7722. Barber-Colman Co. (F-37)

Sealless pumps—Integral construction of motor and impeller; no seal required. Maximum capacity 50 gals. per min. Bulletin 1030. Chempump Corp. (F-38)

Fire pumps—Horizontal and vertical, gas-steam- and electric-powered models to 2,500-gals.-per-min. capacity. Bulletin B-1500. Peerless Pump Div., Food Machinery & Chemical Corp. (F-39)

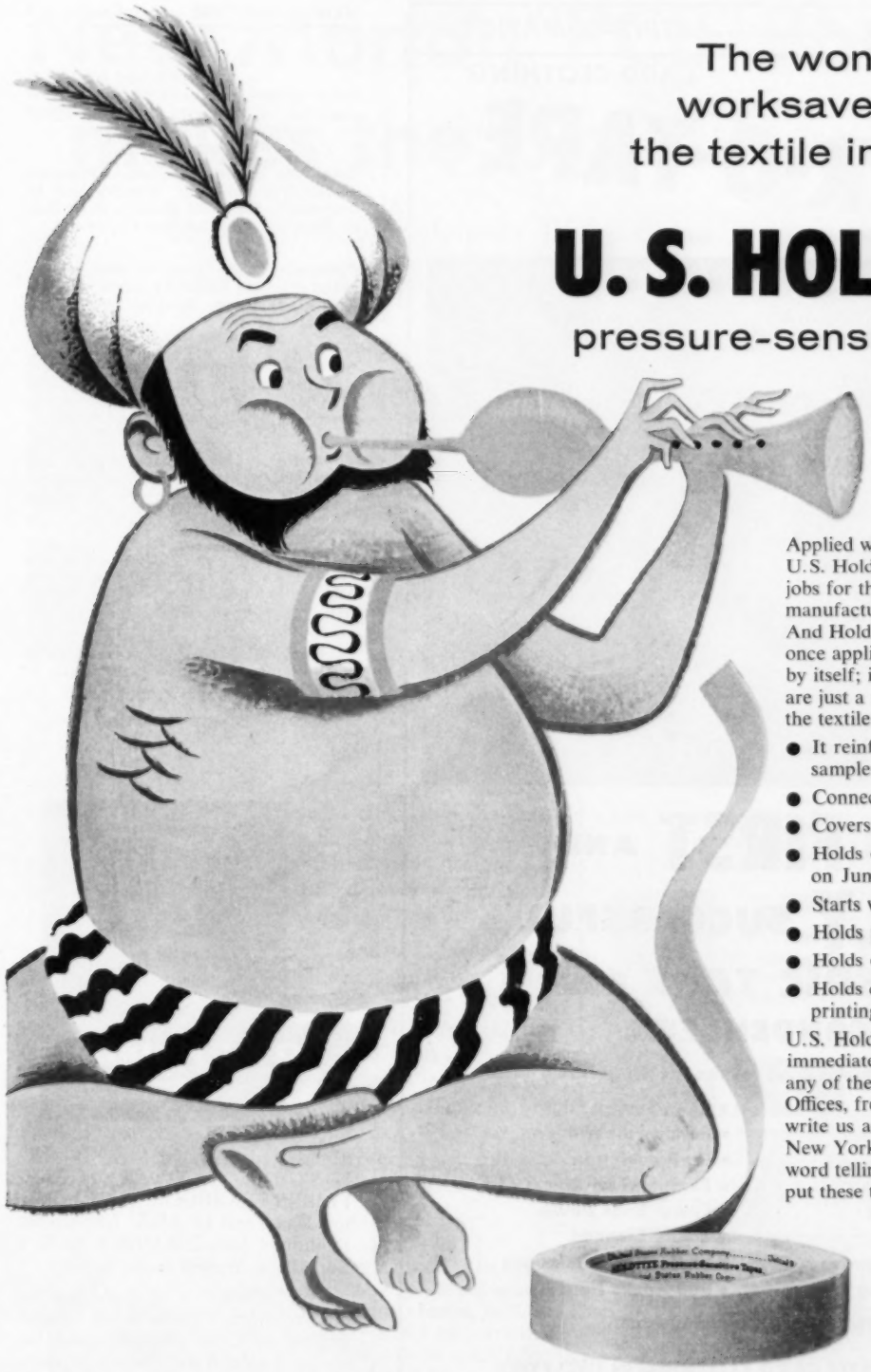
Lighting fixtures—Fluorescent units for plant and office. AIA File 31-F-23. Benjamin Electric Mfg. Co., Leader Div. (F-40)

GENERAL

Steel shelving — For offices, warehouses, other purposes; suggested designs, layouts described in catalog from Hallowell Div., Standard Pressed Steel Co. (F-41)

Export guide—Documentation of information for shippers to Canada from U. S. Consolidated Freightways, Dept. GSF. (F-42)

Electric fork trucks—For confined areas. 3,000-lb. capacity, models 68 and 83 ins. high. Elwell-Parker Electric Co. (F-43)



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Applied with just finger pressure, U.S. Holdtite tape does dozens of jobs for the textile worker in manufacturing and finishing cloth. And Holdtite is correctly named—once applied, it can never get loose by itself; it must be removed. Here are just a few of Holdtite's uses for the textile man:

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- Holds ends after slashing.
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U.S. Holdtite strips clean. For immediate delivery, order now from any of the 28 "U.S." District Sales Offices, from your distributor, or write us at Rockefeller Center, New York 20, N. Y. We welcome word telling of uses to which you put these tapes.

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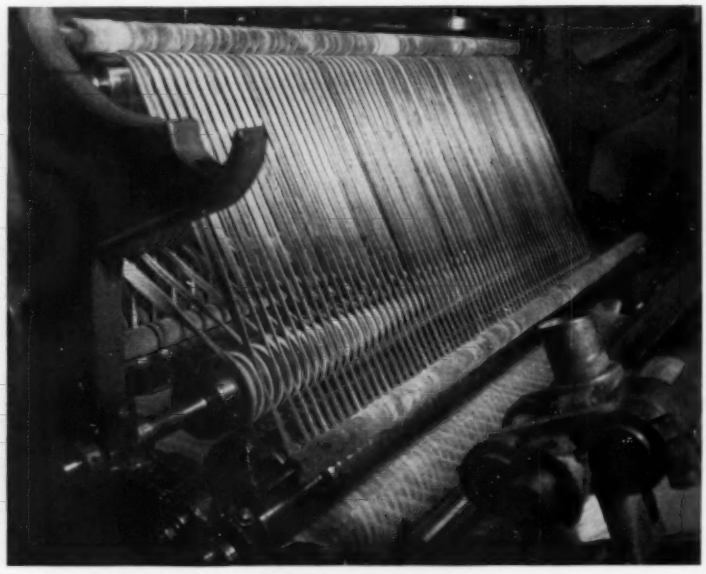

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NEW LITERATURE Continued

Color guide—For steel strapping, now supplied in 12 colors by Acme Steel Co. (F-44)

Employee communications — Program of posters, bulletins, lithographed in four colors for plant display, described in booklet from Clarkson Co. (F-45)

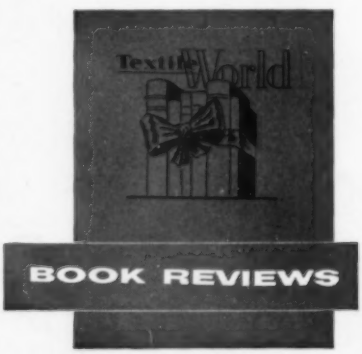
Packaging tips—How to seal corrugated shipping boxes by tapes, staples, straps, adhesives. Booklet from Hinde & Dauch. (F-46)

Portable conveyors — For loading, stacking, moving materials in packaged units. Forms 300-56 and 350-56 from Rapids-Standards Co. (F-47)

Tape dispensers—For gummed and pressure-sensitive tapes, described in flyer CP-8326 from Better Packages, Inc. (F-48)

Remote weighing systems—For recording weights in digital form on any office machine. Folder 2975. Toledo Scale Co. (F-49)

Corrosion-resistant floors—For industrial plants, described in Bulletin 53 from Atlas Mineral Products Co. (F-50)



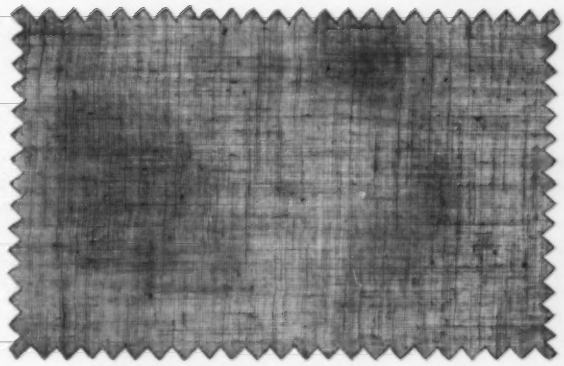
NATURAL AND SYNTHETIC FIBERS YEARBOOK, edited by Milton Harris and H. Mark; Interscience Publishers, Inc., 250 Fifth Ave., New York 1, N. Y.; 949 pages, $45.

This volume is a collection of quite-complete abstracts of papers dealing with the properties and behavior of natural and man-made fibers. Compiled from work published in journals in this and foreign countries in 1955, the abstracts cover a wide range of work done on practically every phase of fiber, yarn, and fabric production. Theory, science, and practical work are well represented.

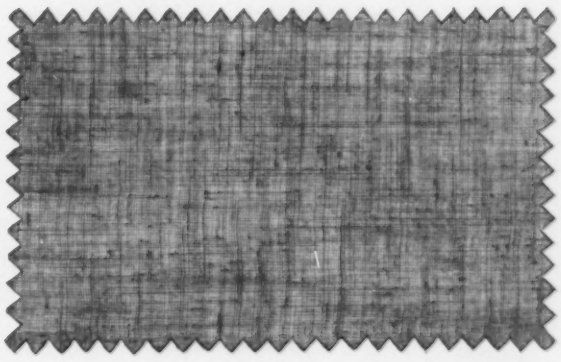
CONTINUED ON PAGE 166

New Morton "PCB" Rock Salt makes the big difference!

Low cost, low calcium "PCB" brine increases color intensity . . . eliminates streaks and off-shading!



Brine made from ordinary rock salt high in calcium can produce harsh, uneven finishes and off-shadings.



Brine made from new Morton "PCB" rock salt means softer finish, more even shades, greater color intensity.

Morton "PCB" Rock Salt is a combination of southern rock salt and special chemicals that produces a low calcium brine. This is a result of a new patented process. This combination is designed to keep harmful calcium deposits from going into solution and thus eliminate them from the brine.

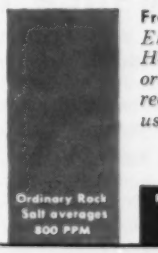
Brine made from "PCB" is *far less expensive* than brine made from purified low calcium evaporated salt. And, as the chart at right shows, "PCB" Rock Salt brine contains approximately 75% *less calcium* than brine made with untreated rock salt. This means "PCB" also saves you money on sequestering agents. (The less than 200 PPM calcium in "PCB" brine will not precipitate.) What's more, "PCB" can be used in your present rock salt dissolving equipment without additional construction or extra labor.

Available in 100-lb. bags or bulk, "PCB" is specifically recommended when brine is used in dyeing rawstock, package, beam, beck or jig with either sulphur, direct or naphthol dyes. ("PCB" brine also can be used effectively in your water softener.)

"PCB" Brine

● Improves crock fastness with naphthol dyes ● Increases color intensity where sulphur dyes are used ● Results in softer finishes, more even shade ● Saves money on sequestering agents ● Aids in retarding corrosion.

PPM Calcium in Brine—Brine made from ordinary rock salt contains approximately 4 times more calcium than brine made with new "PCB."*



Free Brine Analysis—*Let a Morton Brine Engineer take a sample of your brine. He'll have it analyzed in Morton's laboratory and tell you how much you can reduce the harmful calcium content by using "PCB" Salt.*

☐ *Please send me your free booklet on "PCB"*
☐ *I would also like a Morton Brine Engineer to make an analysis of the brine in my plant.*

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Save 30% to 60% in Floor Maintenance Costs

Important NEW improvements in the TENNANT System now make it possible—a saving of 30% to 60% in floor care costs annually, compared to 5 years ago. Here's why, as reported by many mills:

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2. Floor seals last 4 times longer today because they are more wear-resistant, stand up better under oil, grit and dirt. Bright, lustrous finish is easily renewed without need for sanding.

3. You save time in problem areas, like weave rooms, with new TENNANT materials that resist humidity, starch, discoloration, etc. Saves manhours (see photo above). *Write today for details; ask for estimate of savings possible in your mill.*

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FLOOR MAINTENANCE SYSTEM

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BIBLIOGRAPHICAL ABSTRACTS ON REDEPOSITION OF SOIL ON COTTON FABRIC, prepared by ASTM; published by American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa.; 32 pages, $1.

This book reviews the literature on theory and practice of redeposition methods presented at the March meeting of ASTM Committee D-12 on Soaps and other Detergents. References from 1909 to 1953 provide valuable material for those interested in detergents and their effects.

PILE FABRICS FOR INSULATION, by C. W. Long, Wright Air Development Center; available from OTS, U. S. Dept. of Commerce, Washington 25, D. C.; 47 pages, $1.25.

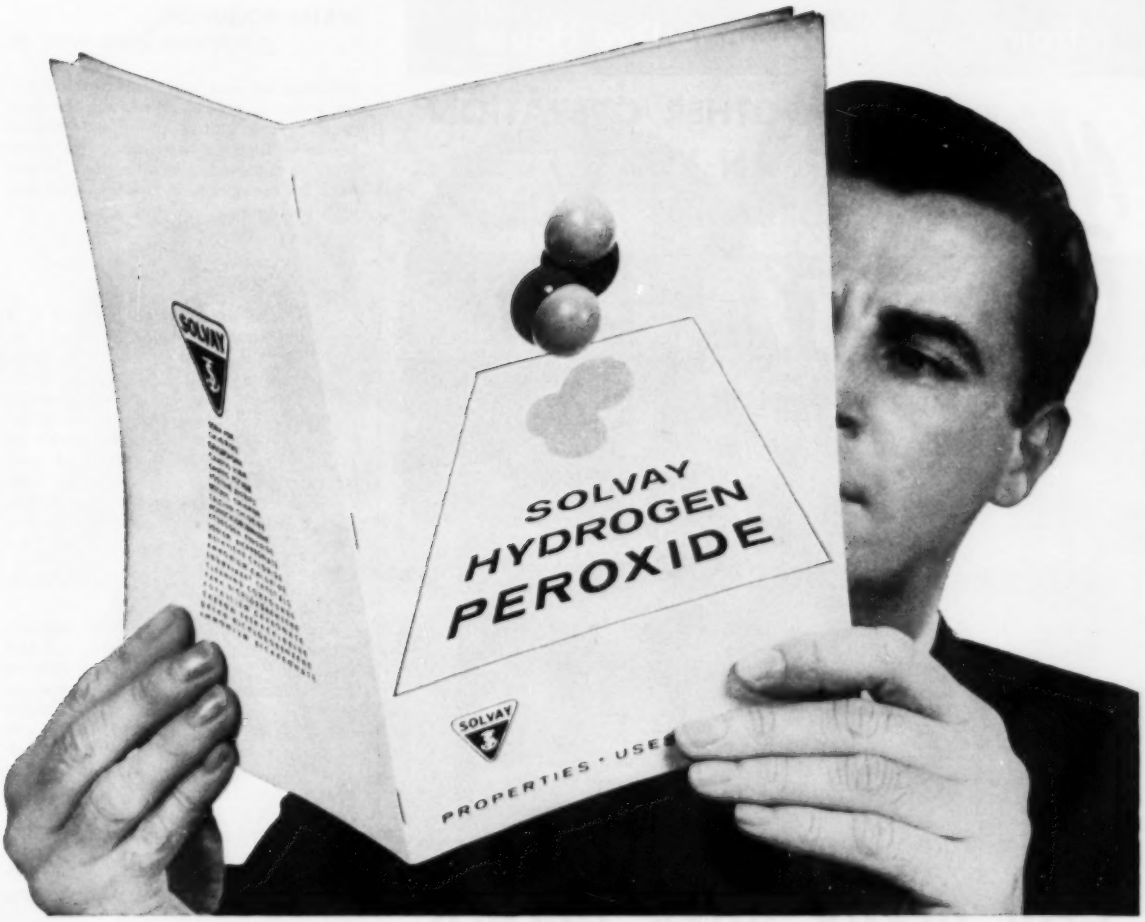
An evaluation of the insulating properties of pile fabrics made from cotton, synthetic, and wool fibers and blends of fibers. The work includes tests for warmth and compression characteristics and notes that type of fiber has little effect on the warmth of a pile fabric. However, certain synthetic-fiber constructions appeared slightly better.

SECONDARY ASPECTS OF THE POWER LOOM, by W. Middlebrook; published by Emmott & Co. Ltd., 31 King St. West, Manchester, England; 131 pages, five shillings.

This monograph is a companion booklet to "Primary Aspects of the Power Loom." The text covers such loom motions and accessories as side and center fork motions; loom brakes; warp stop motions; loom temples; and selvage motions. The booklet is well-illustrated with photographs and drawings.

TAX PLANNING IN BUSINESS POLICY, published by American Institute of Accountants, 270 Madison Ave., New York 16, N. Y.; 152 pages, $2.

The information in this booklet was contributed by business executives and deals with the deductions possible from vacation plans and other fringe benefits. It points out that certain company-instituted benefits, unless properly set up, may become tax liabilities of the employees.



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Epoxidation
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from Opening Room to Dye House

NOW! SMOOTHER OPERATION THAN YOU'D EVER DREAMED POSSIBLE

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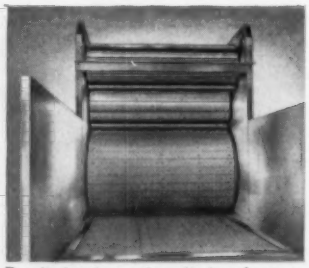
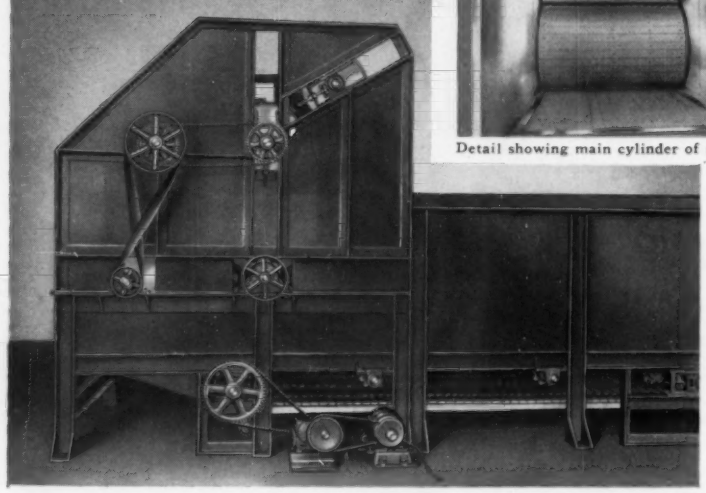


Detail showing main cylinder of opener



NEW HEAVY DUTY OPENER
with Rotary Evener and Stripper

delivers to the next succeeding process a more open, lofty fibre than ever possible with conventional-design openers.

Rotary drives replace the usual oscillating movement of evener and stripper rolls . . . exceptionally rugged construction insures less maintenance, longer life, reliable production quality of 2000 to 3000 pounds per hour

. . . no feed rolls hold fibre while being picked, resulting in semi-combing action and fewer neps at the card . . . rolls adjusted to intermesh pins, providing continuous stripping . . .

From opening heavy grease wools for better picking and cleaning, to opening compacted dyed fibres — natural or synthetic — for better drying, here's a really modern-design opener to guarantee a superlative job.

Want more information? Write your nearest representative or write us direct. And ask for Bulletin No. 202.

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WATER POLLUTION

CONTINUED FROM PAGE 76

industrial use and waste transport. Existing pollution sources must abate, or show cause. New sources prohibited without permit. Increases or changes in waste must be approved. Penalties to $500 per week for conviction of violation after due legal processes.

Rhode Island

Inland and tidal waters included in a broad law administered by Chief of Div. of Purification of Waters. (Gen. laws, 1938 Chap. 634, amended in 1939, 1940, 1947, 1950, 1954.) Pollution is generally prohibited. If investigation shows pollution of a stream, offenders punishable by $500 fine. Convictions obtained only through specified legal procedures. Law is flexible as to means of compliance, appeals, stays, etc.

South Carolina

Public policy of state is to maintain reasonable standards of purity. Water Pollution Control Authority determines stream quality, approves or disapproves present or future practices. Classifies waters where necessary under 1952 Code of Laws of S. C., Sec. 70-101 through 70-139, Vol. 6. Unlawful to pollute streams in excess of established standards. Permits required for new waste outlets, for construction of disposal systems. After May, 1950, waste discharge causing pollution must stop—one year allowed for compliance, five years in some cases. Fines to $500 per day of violation.

Virginia

Broad 1950 law, applying to all inland and coastal waters, to maintain water quality, prevent increased pollution, and reduce existing pollution. After 1940, all industrial wastes subject to review by board as to effect on streams, treatment plants may be ordered if necessary; certificates to continue contingent upon evidence of need and projected improvement in reasonable time. New plants must register with board, show type and amount of waste.

Vermont

Waters are classified by a 1949 law. Class A is for domestic water supply, may not be polluted. Class B, recreational, industrial use; limited pollution permitted. Class C waters are slightly lower grade. Class D waters primarily for waste transport. No new sources of pollution permitted except through application to Water Conservation Board. Situations existing prior to 1949 permitted to continue provided that after stream classification, any pollution does not exceed amounts permitted in that classification.

CONTINUED ON PAGE 170

now, Crucible low nickel stainless steels that meet many of your needs . . .

Here are two *new* Crucible grades, Rezistal type 201 and 202 that are similar in quality and properties to types 301 and 302 . . . but with desirable features all their own.

In the annealed condition, for example, Rezistal 201 and 202 have about 10% higher strength than 301 and 302, yet maintain almost identical ductility. This means that these grades can be fabricated with ease equal to their counterparts. In addition, their mill finishes and corrosion resistance to a wide variation of media compare most favorably with 301 and 302.

To sum up: Rezistal 201 and 202 have practically all the desirable properties of 301 and 302, *plus* some of their own. And they're available *promptly* in all forms. Write now for data sheets fully covering the properties of these new stainless grades. *Crucible Steel Company of America, Dept. ATW, The Oliver Building, Mellon Square, Pittsburgh 22, Pa.*

CRUCIBLE first name in special purpose steels

Crucible Steel Company of America

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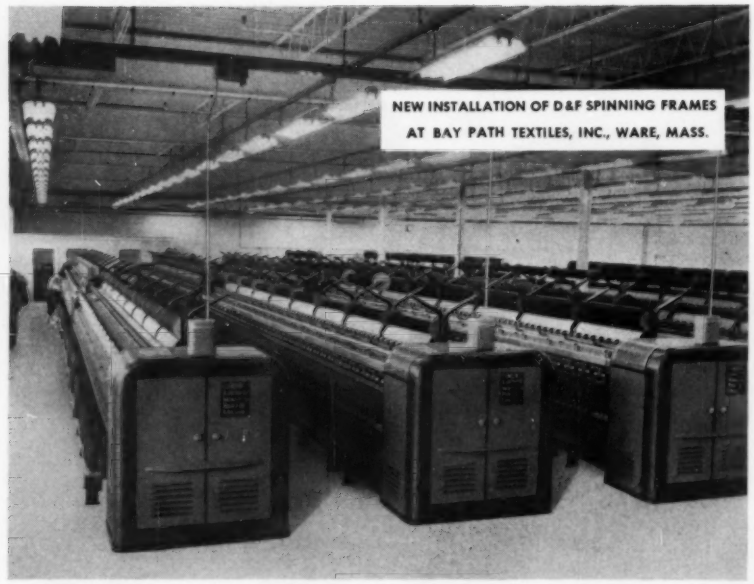
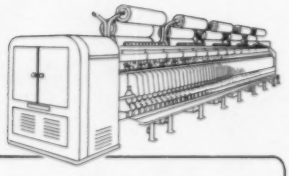


Compare your wool spinning records with these

"coordinated production" figures



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	Carpet, Felts & Blankets	Apparel & Men's Wear
Front Roll Speeds RPM	150 to 200	75 to 150
Spindle Speeds RPM	2400 to 4000	4000 to 6200

Speed variations according to stock specifications

Profitable mill operation requires thorough, expert planning of both the necessary equipment and the method of operation. Here are positive ways Davis & Furber can help you obtain *such* "Coordinated Production" efficiency — vital in today's competitive market.

A Davis & Furber Technical Survey will include:

Recommendations for —

★ *An over-all production improvement plan.*

★ *Equipment additions or changes to match your stock and yarn specifications, together with the investment required.*

★ *Establishment of a preventive maintenance and operating program, to increase efficiency.*

Plus actual:

★ *Set up of equipment "in-the-mill."*

★ *Follow-up to assure peak performance and production.*

The benefits of Davis & Furber experience are yours for the asking. Contact us now at North Andover, Mass. or Charlotte, N. C. Ask for the D&F News to help with your planning.

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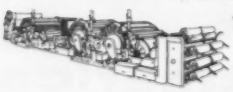

TEXTILE MACHINERY DESIGNERS AND MANUFACTURERS
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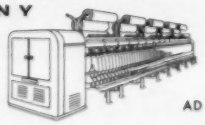

AD 11-3

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MACHINERY MODERNIZATION • ACCESSORIES, SUPPLIES, SPARE PARTS • TECHNICAL SERVICE & CONSULTATION

West Virginia

All state waters subject to pollution laws passed in 1953. State Water Commission empowered to determine and regulate pollution as needed. Municipalities and industries subject to investigation by State Water Comm. Permits required for new installations of any kind. Existing pollution sources to be improved. Reasonable times allowed. Penalties to $100 per day for violations.

SPINNING-FRAME CAPACITY

CONTINUED FROM PAGE 77

each, transport the full bobbins to the winding room and return with the empties.

Daily Tests Are Made

Daily skein-size and break tests are made. Two of the predominant yarn numbers, 7s and 10s, are designated as "check numbers." Tests made on these yarns are evaluated statistically, and the yarns also are tested on the Uster tester.

Yarn-appearance cards are made each quarter and graded according to standard yarn boards recommended by the American Society for Testing Materials. Ends-down tests are made periodically.

Columbia Mills, a unit of Mt. Vernon Mills, Inc., produces weekly about 325,000 lbs. of high-grade duck. End products are hose, belting, chafer cloth, filter duck, numbered duck, and dryer felt.

SLASHER CAPACITY

CONTINUED FROM PAGE 87

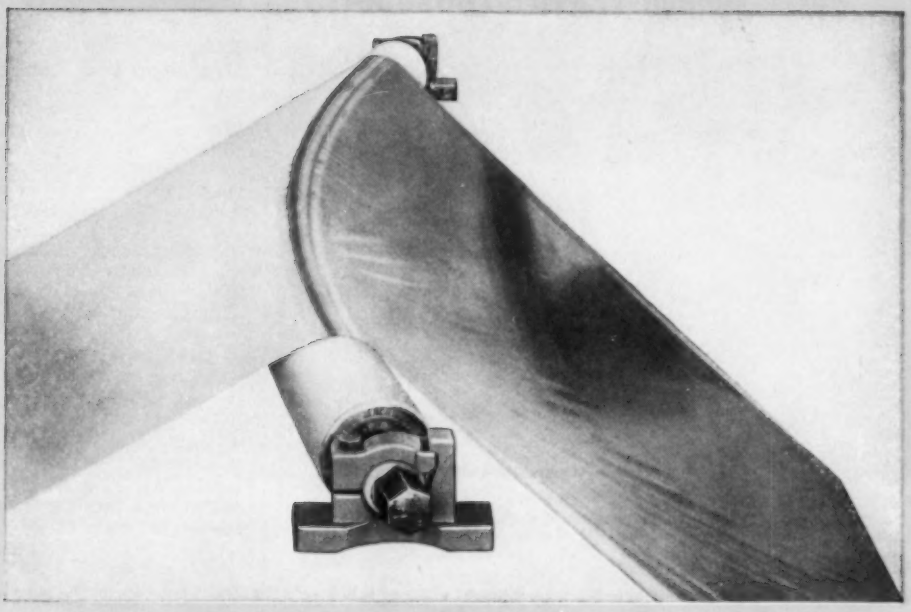
One of the slashers is equipped with a lift to raise the empty warp-yarn beam into place on the slasher drive. The lift is shop-made and consists of a compressed air cylinder with a fork or cradle attached to the end of the piston.

In operation, a beam is placed in position on the floor in front of the slasher and over the lift. The operator holds the yarn beam to guide it into place and presses a foot pedal. The air cylinder pushes the lift and causes it to raise the beam to the desired position.

The various innovations and improvements at Opelika have made it possible to run more than twice as much yarn through the slashers as formerly. But more important, the yarn is sized better and with less human effort than was possible before the change.

Mount Hope SYSTEM

"FREE-WHEELING" EXPANDERS KEEP FABRICS at FULL WIDTH



Mount Hope "Free Wheeling" Expanders keep FABRICS at FULL WIDTH, without distortion. GET RID of wrinkles and spoiled yardage, watch production and profits increase!

For Maximum Production—Lower Cost, Minimum Seconds—USE the complete MOUNT HOPE SYSTEM

Write for a Production Cost Survey of your plant.

Write for Bulletin #7640

Originators of Modern Expanders. Leader in Cloth, Paper and Plastic Handling

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UCON water-soluble TEXTILE LUBRICANTS
Trade-Mark

Just stir these lubricants into water and they're ready to apply. When their work is done, remove them with a water rinse. No emulsifying or coupling agents are needed to solubilize them . . . no costly alkalies or detergents are needed to remove them.

UCON Lubricants are non-petroleum products with *true*, scientific water-solubility.

For 5 years, UCON Lubricants were tested in every phase of wool lubrication. Now, they are used in regular production by woolen mills. Only 1 to 3% is needed to give maximum lubrication.

UCON Lubricants are universally efficient—give even running on all yarn counts. They have built-in "drag," which gives uniform draws even with finest yarns at limit spins. And, they minimize static.

Get the full story on UCON Textile Lubricants. Fill in and return the coupon *today*.

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Name.....

Company.....Position.....

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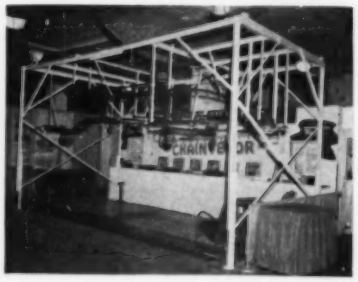
CONTINUED FROM PAGE 92

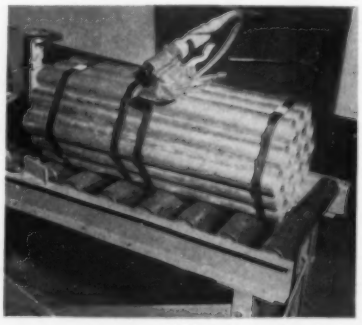


Overhead Lap Conveyor

An overhead conveyor for handling picker laps was operating in the booth of Chainveyor Corp., Los Angeles, Calif. For other moving applications, weights up to 240 lbs. can be handled with the conveyor at each point.

The conveyor runs horizontal, straight up, straight down, or upside down. It turns curves as sharp as 16-in. radius. Special frogs, switches, turntables, and carriers are supplied. **(A-53)**

▶ **Fully automatic dockboards** were demonstrated by The Kelley Co., Inc., Milwaukee, Wis. The dockboard adjusts itself to truck beds the instant the truck contacts the dock. **(A-54)**

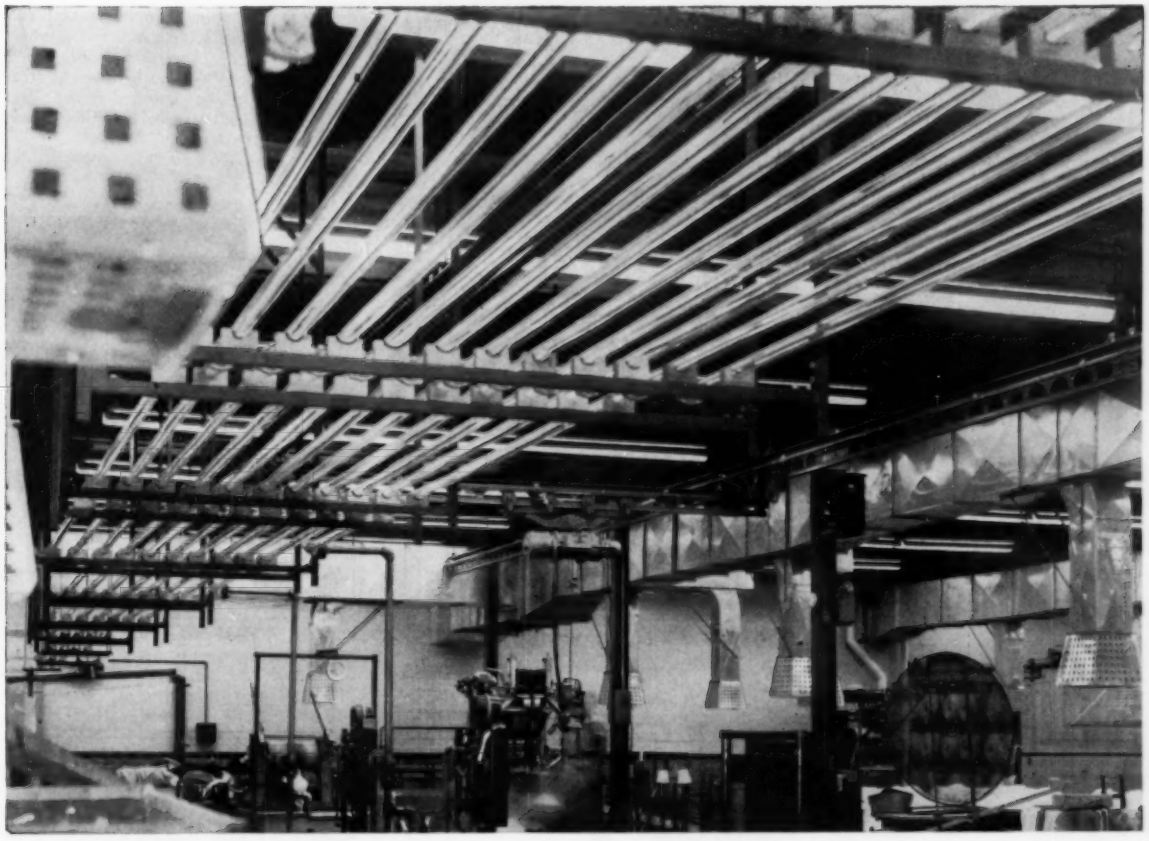


Strapping Tool

A pneumatic stretcher for banding materials was shown by Brainard Steel Div., Sharon Steel Corp., Warren, Ohio. The stretcher is supplied with 8 ft. of air hose and a coupling.

To use the tool, you thread a seal on the strapping, place strapping around the package, and apply tension with the strapper. To remove the tool, tilt it and the strapping breaks. **(A-55)**

CONTINUED ON PAGE 174



You may have to pipe corrosive dye stuffs and chemicals but you needn't put up with pipeline corrosion. Read what American Thread did.

Corrosion is out of this picture *because* PYREX® pipe is in it

These lines in American Thread Company's Sevier, N. C. plant handle corrosive dyes and chemicals.

Even after two years in this service, they look and perform like new, show no signs of corrosion.

They're made of a PYREX brand chemical resisting glass. No chemical bleach or dye stuffs will harm them. To illustrate its extreme corrosion resistance—you could run 5% hydrochloric acid at 212° F. through PYREX pipe for 203 years and still have two-thirds of the original wall thickness.

Besides being the most corrosion resistant pipe you can use, PYREX pipe gives you absolute protection against metal contamination.

And you can use the same lines interchangeably for any dye. To change over, simply flush the pipe with fresh hot water until the line *looks* clean (another advantage of glass—clear transparency). Then start the next run through.

Besides the savings you get by eliminating corrosion and in simplified cleaning, PYREX pipe is economical to install. Your own men can do it. The need for repair and replacement is practically nonexistent. Some lines have been in continuous service for over 20 years and are still as good as new.

Initial cost compares favorably with that for other corrosion resistant pipe materials that do not offer the advantage of glass.

If you would like to know more about the value of PYREX pipe in your plant, send for our Bulletin EA-1. The few minutes it takes to read it can bring you profits for years to come.

CORNING GLASS WORKS
78 Crystal Street, Corning, New York
Corning means research in Glass

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Please send me Bulletin EA-1 "PYREX brand Glass Pipe in the Process Industries."

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Remove Selvage Ends Automatically from Woolens, Worsteds and Textured Fabrics

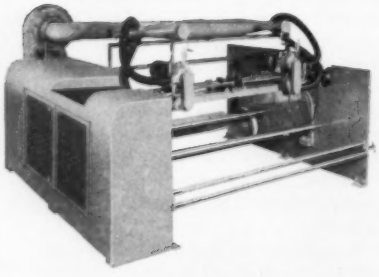
USE THE

HERMAS SELVAGE TRIMMER

At last, manufacturers of woolens, worsteds, terry cloth, and blankets can machine clean their goods automatically.

The Hermas Selvage Trimmer cleans *only* the selvages. It does not touch the face or back of goods. And it does the job at one pass, at rates up to 120 yards a minute.

The new trimmer quickly pays for its cost.



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Write today for all the facts.

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HERMAS MACHINE COMPANY
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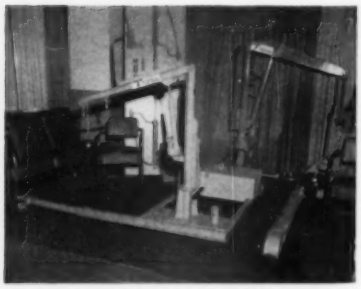
Send me your 4-page folder describing your Selvage Trimmer for textured, woolen, worsted and plain goods.

Name .....

Company .....

Address .....

► **Reusable shipping containers** that can be torn down or set up in a few minutes were shown by Ackermann Mfg. Co., Wheeling, W. Va. The lightweight steel containers can be knocked down and stored in a small space when they aren't being used. (A-56)



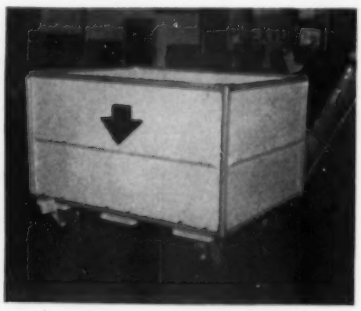
Lightweight Floor Crane

A ¼-ton hydraulic floor crane with swing-around boom was demonstrated by Ruger Equipment, Inc., Uhrichsville, Ohio. The crane is suitable for lifting dobbies onto looms, handling work being machined in machine shops, lifting steel drums, and handling shipping cases.

The crane is equipped with a built-in automatic overload safety valve to protect the operator, load, and equipment.

It is moved easily and can be mounted on motor trucks to load or unload materials. The ¼-ton crane is operated by hand; other larger models are operated by motors. (A-57)

► **Two industrial-truck batteries** in 66 and 125-amp.-hr. ratings were shown by C&D Batteries, Inc., Conshohocken, Pa. These two batteries give a 10% increase in amp.-hr. ratings over batteries previously made by C&D. (A-58)



Trucks for Wet Processing

Tubular-frame trucks with fiber-glass-mat panels were shown by G. B. Lewis Co., Plexton Div., Watertown, Wis. The trucks come in three colors: red, white, and green.

The feature of the truck is a ribbed section molded in the panel (arrow in

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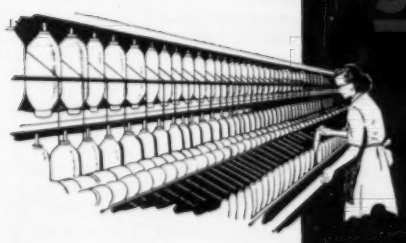
SEALMASTER *Features!*

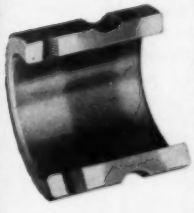
AS FAMILIAR TO YOU... AS THE

PROBLEMS THEY ELIMINATE?



LOCKING PIN AND PERIMETER DIMPLE

prevents rotation of outer bearing race assuring positive lubrication while allowing for several degrees of misalignment in any direction. Misalignment of shaft cannot interfere with effectiveness of seal.



ZONE HARDENING

Provides positive race-to-shaft locking, eliminating shaft wear and reducing fretting corrosion. Inner race ring is thru-hardened in ball path section only — leaving extended portions in original, soft, tough metallurgical state. Hardened set screws tightened through soft extension provide firm bind to shaft.

LABYRINTH SEAL

felt-lined steel flingers rotating in labyrinth prevent entry of dirt and dust and retain proper amount of lubricant for long bearing life.

BALL RETAINER

brass ball retainer spaces balls accurately for proper distribution of radial and thrust loads . . . rides on ground inner surface of the outer race ring, eliminating ball wear, trapping grease and preventing "churning" in the bearing.

Write for Bulletin 454 for full information.

SEALMASTER

BALL BEARING UNITS

SEALMASTER's exclusive combination of engineering features are important to smooth bearing performance. They are important to you and the machinery you manufacture or operate. They are available in a complete line of SEALMASTER standard and special Ball Bearing Units.

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U.S. Patent Nos. 2,516,632; 2,516,633; 2,516,634.

The unique properties of Penford Gums (highly substituted starch ethers) in both the fluid state as well as in the form of dried films facilitates improvements in warp sizing and textile finishing operations.

WARP SIZING—The complete range of viscosities available in Penford Gums makes them adaptable to use in a variety of difficult-to-size spun yarns.

combed cottons	*hydrophobic fibers*
viscose	*blends of hydrophobic and other fibers*
viscose-acetate blends	*worsted fibers*

TEXTILE FINISHING—The versatility of Penford Finishing Gums with their high degree of reactivity with both melamine and urea-formaldehyde resins affords superior finishes. They are durable to laundering, provide for dimensional stability of fabric, and are wrinkle resistant.

Penick & Ford's Technical Sales Service Engineers are at the service of Textile Finishers and Processors to assist in the selection of the Penford Gums best suited to produce the desired finish on specific finishing equipment.

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Valuable Brochure is available upon request. Send for your copy now.

picture) to provide greater strength.

The four-wheel caster box is easily maneuverable. The trucks are said to be particularly adaptable for handling yarns and fabrics in wet processing. They are resistant to warping, snagging, and fading.

Standard sizes are 26x18x18 ins., 38x28x22 ins. and 48x28x30 ins., inside measurement. Special sizes are also available in quantities of 25 or more. (A-59)

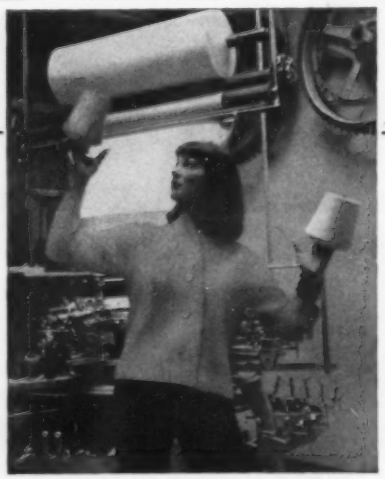
► **Electric hoists** in ¼- to 2-ton capacities were demonstrated by Wright Hoist Div., American Chain & Cable Co., Inc., York, Pa. Hand-operated hoists were also shown. (A-60)

System for Storing Cloth

A system for storing 270 rolls of cloth in an area 19 ft. wide and 90 ft. long was shown by Chicago Tramrail Corp., Chicago, Ill. With the system, any roll of cloth can be removed without disturbing the others.

The hoist for the fork to handle the rolls is equipped with a selector push button that automatically levels the fork at each of two levels of operation. (A-61)

► **A complete line of storage batteries** for industrial trucks was shown by Edison Storage Battery Div., Thomas A. Edison, Inc., West Orange, N. J. (A-62)



picture from plant of LUISA SPAGNOLI Perugia, Italy —one of our foreign users

TOMPKINS

over 110 years' proven performance—
LATCH AND SPRING NEEDLE KNITTING MACHINES

"mostest runnin' knittin' machines in the plant!"

The Head Knitter of an U. S. mill made this brief yet factual statement. Knitters in the know are quick to substantiate the comment, with good reason. The Tompkins record stands undisputed . . . over 110 years of proven money-makers to the Knitting Industry.

We see some Tompkins machines running that are 70 years old — still going strong despite their outdated performance in comparison with new model Tompkins machines. It's like seeing an old Model T alongside a new '56 Ford! Let us help you put in a modernization plan.

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TOMPKINS BROS. CO.
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MODERN SPRING NEEDLE
KNITTING MACHINE

with changeable feeds to make
• Fleece Coatings • Sweat Shirts
• Jersey • Terry • Patterns
• Stripes • Lastex Inlay
—all on the same machine!

TRICOT YIELD

CONTINUED FROM PAGE 93

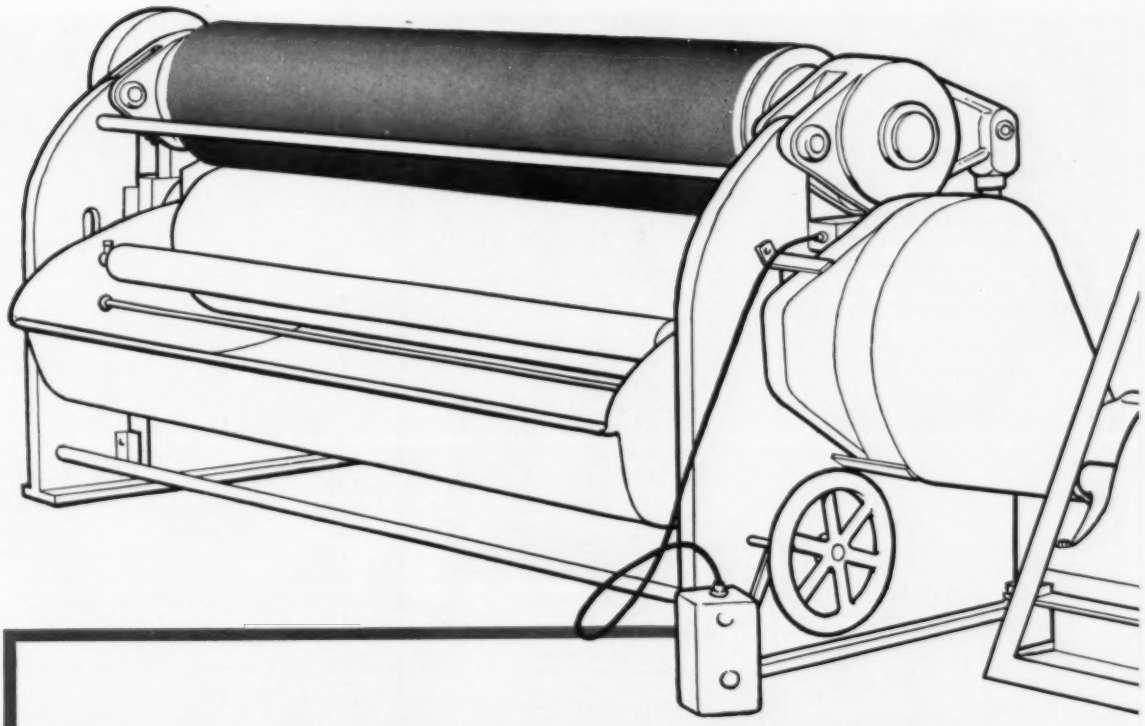
of the moiré is then read on a scale that reads the number of courses per inch.

The figure is recorded, and the Lunometer is then moved to read the number of wales per inch. These figures are checked against the chart.

The line on the chart, representing the particular wale count of the sample, is followed down the coordinates. When the courses-per-inch line is reached, the approximate gray yield or finished weight is then read on the scale at the bottom of the chart.

The wale lines for 48, 41, and 37 wales represent finished widths of 92 ins., 108 ins., and 120 ins. respectively for goods knitted 168 ins. wide on 28-gauge tricot machines.

The chart shown is intended for 40-den. jersey-stitch fabrics knitted on 28-gauge machines. The fabrics are to be finished under average frame tensions. Similar charts can be prepared for other deniers.



Up to 50% Savings Estimated with this "job engineered" DAYCO FINISHING ROLL

Estimated costs of roll grinding and change-over were more than cut in half on one operation in a southern finishing mill because of a "job engineered" Dayco Finishing Roll.

A squeeze roll running in conjunction with a stainless steel roll on a starch mangle revolved in a hot, oil-soluble starch solution. Rolls previously used in this operation had to be ground on an average of four times a year due to starch adherence to the roll surface.

Then a Dayco Finishing Roll was installed. Designed and built by Dayton's skilled roll technicians, it was specially compounded to work in the heat, the specific oil and starch used in *this* operation . . . in *this* mill.

That's Dayco "job engineering"—building a particular roll for a particular operation. And *every* Dayco Roll is "job-engineered."

In the fourteen months since this Dayco Finishing Roll was installed, performance, in terms of uniform starching, has been equal or superior to previous rolls. Most important, Dayco Rolls were reground *only twice*. Savings on roll regrinding and change-over were estimated at 50%.

For complete details on "job engineered" Dayco Finishing Rolls clip and send coupon.

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Please rush me "All the money-saving facts about the New Dayco Finishing Roll".

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Company_____

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• For more than a century, COLE elevated tanks have been helping provide fire protection and adequate water reserve for the textile industry.

Capacities from 5,000 to 2,000,000 gallons—and covering designs ranging from standard hemispherical self-supporting bottom to spherical tank on tubular tower. Send us your inquiry, stating capacity, height to bottom and location. Write for *Tank Talks*.

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Elevated Tanks, Pressure Vessels, Chemical and Processing Equipment from Aluminum, Stainless and Carbon Steel, Monel and Other Alloys.

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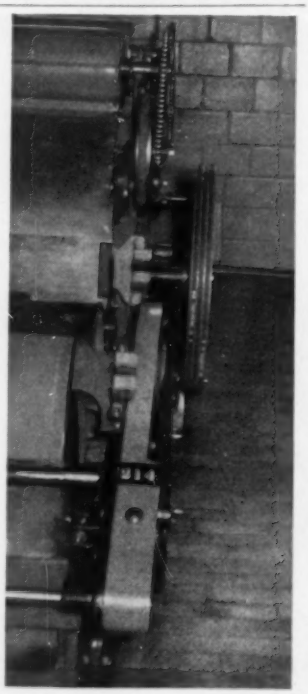
No overhead line shafting . . . no motor overhang between machines—where's the motor?

No, you can't see the motor because it's a 1½ hp., 900 RPM Fairbanks-Morse Axial Air Gap Textile Motor that fits completely within the over-all dimensions of the card.

This compact motor (10½" including shaft) can eliminate for you the dirt and inefficiencies of overhead shafting. There are no clutches, no gears. Using a stock V-belt drive, this lint-free motor brings the card up to 165 RPM in 30 seconds.

No, you can't see the motor here, but we'll be glad to show it to you. Write today to Dept. TW-8, Fairbanks, Morse & Co., 760 Lee St., S.W., Atlanta 3, Ga., or 600 South Michigan Avenue, Chicago 5, Illinois.



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SCALES • RAIL CARS • HOME WATER SERVICE EQUIPMENT • MOWERS • MAGNETOS

How the Chart Is Made

The figures for the yield were derived from runner-length calculations and the number of stitches per square yard.

The formula, which can be adapted to any jersey tricot fabric, is—

$$\text{Approximate gray yield} = \frac{480 \times 4{,}464{,}528 \times 0.91}{W \times R \times C \times D \times 36}$$

Where W = wales per inch
R = total runner lengths
C = courses per inch
D = yarn denier

The allowance, 0.91, is for such factors as working loss and gummed selvages. For the finished weight, the yield is divided by 0.925 to allow for weight losses in finishing of 7.5%.

A voluntary standard for tricot fabrics used in bed sheets was approved by the Warp-Knit Manufacturers Group of the National Federation of Textiles on April 27. The standard, called Type A, calls for a 40-den. nylon yarn with a maximum square yards per finished pound of 7.70. The sum of the wales and courses must not be less than 78.

With this chart, the standard can be easily recognized. All fabrics tested that fall to the right of the heavy vertical line, which represents a 7.70-sq.-yd. finished weight, are not to the standard of Type A.

REVOLVING CLEARERS

CONTINUED FROM PAGE 103

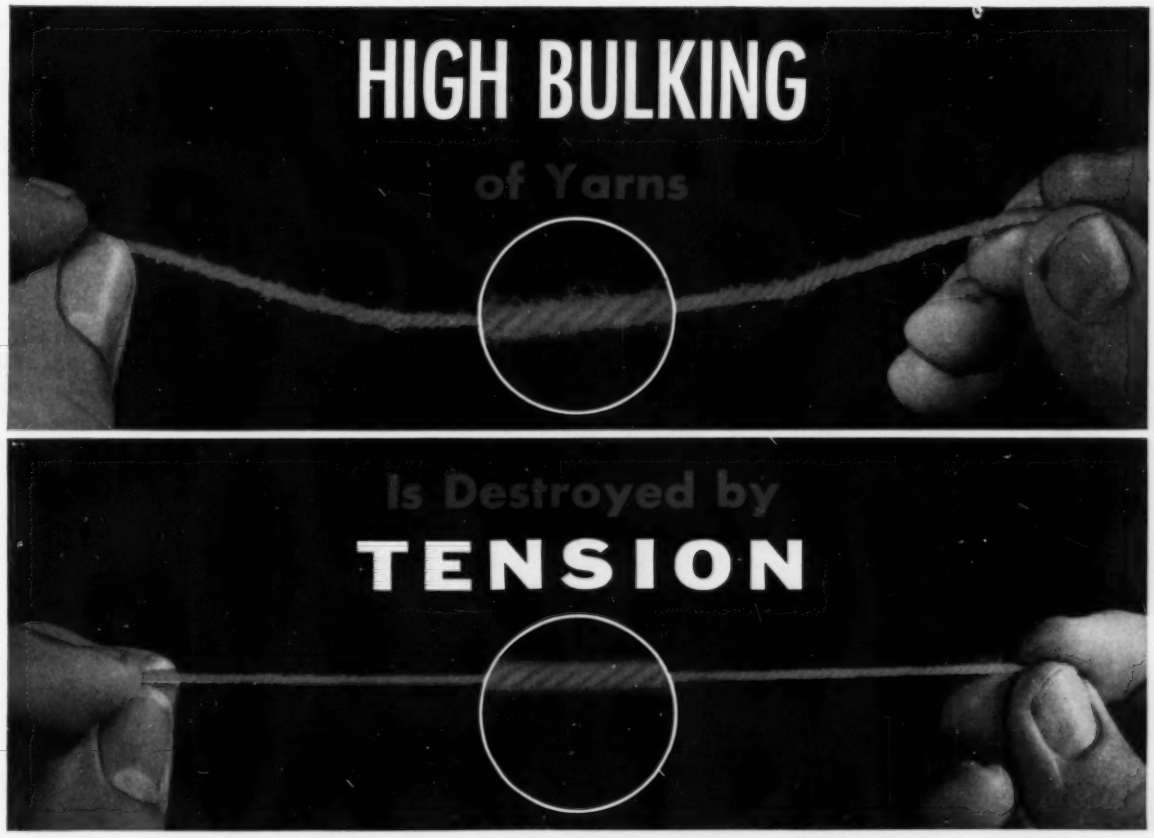
Handling Is Reduced

The roll picker handles the clearer only when she takes it off the frame and puts it back on. She picks the clearer up and places it on the holder so that both ends of the clearer are held in position by two spring-steel clamps. Both hands are then free to work.

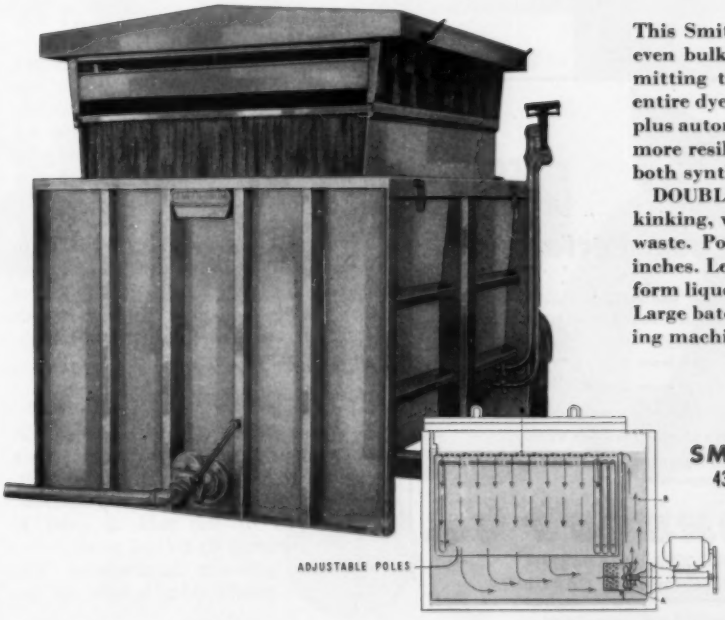
She breaks the laps of clearer waste loose and then turns a handle that revolves a wire-covered roll. The roll removes the loose clearer waste and brushes the exposed clearer cloth. Then the roll picker replaces the clearer on the spinning frame and cleans the next clearer.

The new method of cleaning revolving clearers cut the time involved from 36.48 to 21.28 mins. per frame, and labor savings amounted to $13.12 weekly. More important, the new method is popular with the operators.

The savings cited are for the front



SMITH-DRUM Pulsating Skein Dyeing Machine Keeps Yarns *Relaxed*



This Smith-Drum machine maintains the high, even bulking characteristics of ORLON* by permitting the yarn to remain relaxed during the entire dyeing process. The pulsating flow feature, plus automatic flow reversal, produces fluffier and more resilient yarns. The machine is suitable for both synthetic and natural fibers.

DOUBLE SET OF POLES prevents snarling and kinking, which improves winding and eliminates waste. Poles are adjustable for skeins up to 76 inches. Level dyeing is obtained as a result of uniform liquor flow throughout the dyeing chamber. Large batches may be processed by interconnecting machines. Write for complete details.

*DuPont's *trademark for its acrylic fiber*

SMITH, DRUM AND COMPANY
432 West Allegheny Avenue, Philadelphia 33, Pa.

Southern Representatives:
PARROTT & BALLENTINE
510 South Carolina National Bank Building
Greenville, S. C.

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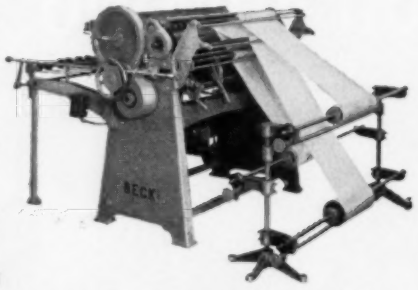
The *NEW* approach for textiles

The BECK Automatic Roll Sheet Cutter



here's what it can do for you

Change your cutting room from a problem to a profit making proposition. Quick size change over; lower cutting costs; less handling and reduced waste.

on materials like these

Toweling, pillow cases, diapers, wiping cloths, duck, canvas and just about any textile or synthetic you can mention. Write for catalog to find out how you can profit from the Beck Automatic Roll Sheet Cutter.

CHARLES BECK MACHINE CORPORATION
50 CHURCH ROAD, KING OF PRUSSIA, PA.

Pacemakers since 1864 in the Engineered application of Sheet Cutters and Slitters

The DODENHOFF Hydraulic Checkmaster* Greatly Improves Loom Performance

- Positive, constant, and accurate check of shuttle on *every* pick. Checks power stroke, too, reducing bumper wear.
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- Permits increase in loom speed.
- Stops kinky fillings and produces even selvage.
- Solves Monday morning start-up troubles.

Try the Dodenhoff Hydraulic Checkmaster on your looms and check the improvement.

*Pat.s Pending and Applied For

W. D. DODENHOFF CO.
INCORPORATED
GREENVILLE, SOUTH CAROLINA

line of clearers only. We continue to hand-clean the back line of revolving clearers, since these clearers are very easy to clean after running as much as six weeks.

The mechanical cleaner plus the original change from flat clearers to revolving clearers brought our total savings for clearer cleaning to $96.32 weekly. The two simple changes made in the spinning room are saving us $4,816 per 50-week year.

CUSHION-FOOT SOCKS

CONTINUED FROM PAGE 99

The bundles drop off the conveyor table to another conveyor placed at right angles to the first conveyor. An inspector stands at this position and spot-checks the work. The lower conveyor sends the socks to the gray-goods section, where goods are sorted in styles and sizes and stored in racks.

Dye runs are made up from the racks. The dyehouse ticket is made with the dyestuff formula broken down to give a double-check on the chemical inventory and to prevent mistakes. Standard shades are kept in the dyehouse, but each lot is also checked with similar standards in the boarding and finishing rooms.

Key personnel in the boarding and finishing rooms are provided with copies of the dye runs. Dates are stamped on these forms daily to give a check on the processing of each lot.

After extraction, the socks are run through a dryer heated to 160° F. About 15 mins. in the dryer partly dries the goods, and they are left overnight to age to give the socks a better appearance.

Each style is boarded on different forms that are specially made for cushion-foot socks. The boarding-room foreman checks every dye lot and all white goods with the original sample. After boarding, the socks are laid on boards and put in finished stock.

Orders are assembled at a central point in the finishing room. Colored order forms are used and colors are changed weekly to keep goods flowing smoothly through the finishing room.

Machine Applies Transfers

Socks are inspected and paired on individual tables, and nylon styles are transferred with an electrically operated iron. An automatic machine, developed by the mill, is used to apply transfers to cotton goods.

Three girls run the machine. The first girl places rider tickets on the

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Capacities to 150 G.P.M.

Heads to 600 Ft.

AURORA® APCO Two Stage Pump for High Pressure Service

APCO is the highest development of the Turbine-Type Pump. Unsurpassed for small capacity high head duties. Handles non-lubricating liquids almost indefinitely without wear. Suited to "1001" duties. Write for Bulletin 111 or Condensed Catalog "M".

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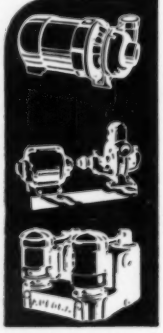

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Directly apply variable speeds WITH

LEWELLEN combination pulleys

Where there are two paralleled shafts—usually a motor and machine shaft—apply variable speeds by directly connecting the two with Lewellen Combination Pulleys.

Handwheel of one Pulley regulates pitch ratios of both Pulleys at fixed centers. Range of speeds is the multiple ratios of both Pulleys.

FOR SLOW OPERATING SPEEDS

Motor, Combination Pulleys, and reducer comprise an accessible power package of standard components.

Foote Bros. Vari-Mount Reducers assemble a compact variable speed unit. Selection of ratings, service factors, speed ranges, and output speeds are now catalogued.

Write for Catalog No. 60-A complete new section on combination pulleys

LEWELLEN MANUFACTURING CO., COLUMBUS, IND.

Distributors in All Industrial Areas • In Canada—Peerless Engineering Sales Ltd., Toronto-Montreal

socks and hands them to the second girl, who feeds the socks in pairs to a conveyor table.

Two rolls of transfers are located on a bridge over the table. These transfers travel through a holding-down device that releases the transfer at intervals.

As the socks move down the table, they pass under a wheel that lifts and operates a Micro switch to bring down the electrically controlled heater device to print the transfer on the sock. Two rollers draw the used transfers away and drop them in a box.

A third girl removes the socks from the conveyor. Patents have been applied for the machine, which allows the three girls to process 200 doz. socks per hour.

The socks are now ready for boxing, and three pairs are put to each lot and boxed. Boxes are made in the mill and are printed with various labels.

The Davis 4D Super cushion-foot sock is guaranteed for three months' wear, and President Walter D. Fay reports that the returns are too negligible to include in cost figures. The mill now produces about 22,000 doz. cushion-foot socks weekly.

This record is partly due to the closeness of personnel with management. When quality goes off standard, management usually hears about it first from the workers.

COMBED-YARN FABRICS

CONTINUED FROM PAGE 109

job, aprons are used.

Warps are retied in the weave room with a Barber-Colman Model LC portable tying-in machine. The portable machine is also used to tie lifted-out patterns much as they are tied with a standard stationary tying-in machine. The warps are tied on a mill-made wooden rack.

Little Manual Cleaning Used

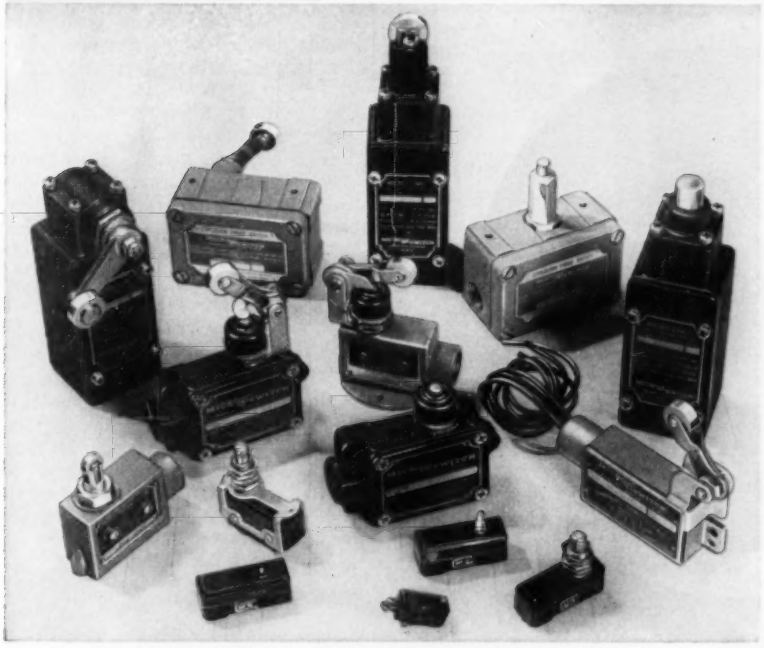
There are six lines of Parks-Cramer overhead loom cleaners; each line blows off two rows of looms facing each other. One blower blows off the front of the looms, and the other blows off the back.

Each weaver wipes off the handrail on one-third of his looms each shift. In this way, the handrails are cleaned every 24 hrs. Looms are cleaned only at warp-outs. No other loom cleaning is done.

The weave-room floor and building are kept clean by a maintenance crew. Floors are scrubbed each week with machines. There's a standard-size

MICRO precision switches

...THEIR USE IS A PRINCIPLE OF GOOD DESIGN



There are USES UNLIMITED for MICRO precision switches on textile machinery

Thousands of textile machines have been given a new lease on life, made more automatic, more productive and safer by the installation of one or more MICRO precision switches.

Whether you are a manufacturer of new textile equipment or whether you are a plant operating man, it will pay you to know about these extremely reliable, long-life precision switches.

Illustrated on this page are just a few types of these switches which have proved to be valuable in control of textile machinery as limits, safeties and interlocks.

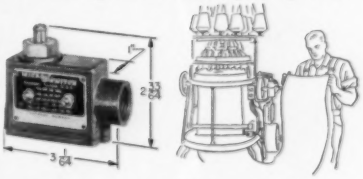
Here are just a few of the many uses mill owners have found for these versatile precision switches:

As trumpet stops for combing heads
•
To prevent needle breakage
•
To eject unfilled quills automatically
•
To control position of pressure roll
•
As thread breakage detectors
•
To position clamps on cloth stretcher
•
As selvedge build-up control
•
As carriage movement controls
•
To stop bobbin winding when bobbin fills
•
To stop motor when gear box is opened
•
To control tension of cloth
•
To control cloth position
•
As thread run-out detector
•
As fabric thickness detector
•
And many others

Stocks of many types of MICRO SWITCH precision switches for plant installations are available from distributors located in key cities for your convenience. For advice on just the switch most suitable for your application, experienced MICRO SWITCH engineering service is available for consultation. Call the branch office nearest you. Distributors and branch offices are listed under "Switches, Electric" in the Yellow Pages.

Mills find profits by making machinery safer—more automatic

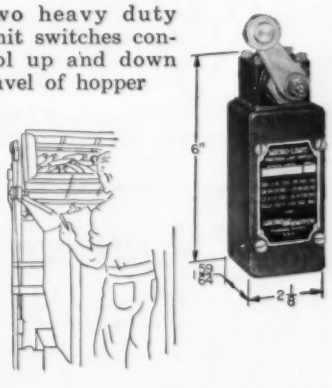
Saves $50 per knitting machine per year



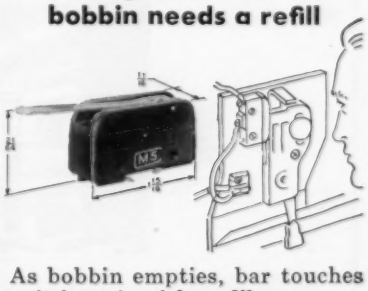
Two MICRO precision switches replace mechanical stops—protect needle beds.

Make quill loading an automatic job

Two heavy duty limit switches control up and down travel of hopper



Signals when bobbin needs a refill



As bobbin empties, bar touches switch to signal for refill.

Send for new catalog 83 on industrial switches

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A DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR COMPANY

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MACHINES FOR YARNS • TWINES • CORDS • ROPES

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"An institution of the textile industry since 1915"

machine for open floor areas, and a smaller machine is used to scrub under the loom girders and other hard-to-reach spots.

The maintenance crew washes the weave room walls once a year. The building is painted every five years.

The maintenance men also clean and maintain the Parks-Cramer air-changing system and atomizers.

The fluorescent lamps are cleaned once a month, and the overhead area is cleaned at the same time.

OPENING AND PICKING

CONTINUED FROM PAGE 107

The booster is an endless chain with a series of projecting pins that connect with the train. When the storage section becomes full, an electric-eye device stops the booster to prevent further laps accumulating in the storage section and warns the picker tender or the man who transports laps.

Four Laps Are Carried

Laps are then delivered to one of the two card rooms. A lever on the train is adjusted so that the train is switched either to No. 1 or No. 3 card room. A Monotractor carrier draws the train of four laps along a monorail system.

This system, which is one of the longest in the world for this type of work, extends to the card rooms about 300 yds. away and is completely automatic. When the train reaches the card room, it stops automatically.

A card tender unhooks the train of laps and pushes it to the cards that need laps. The track makes a circuit of the card room, and empty carriers are switched back to the picker room.

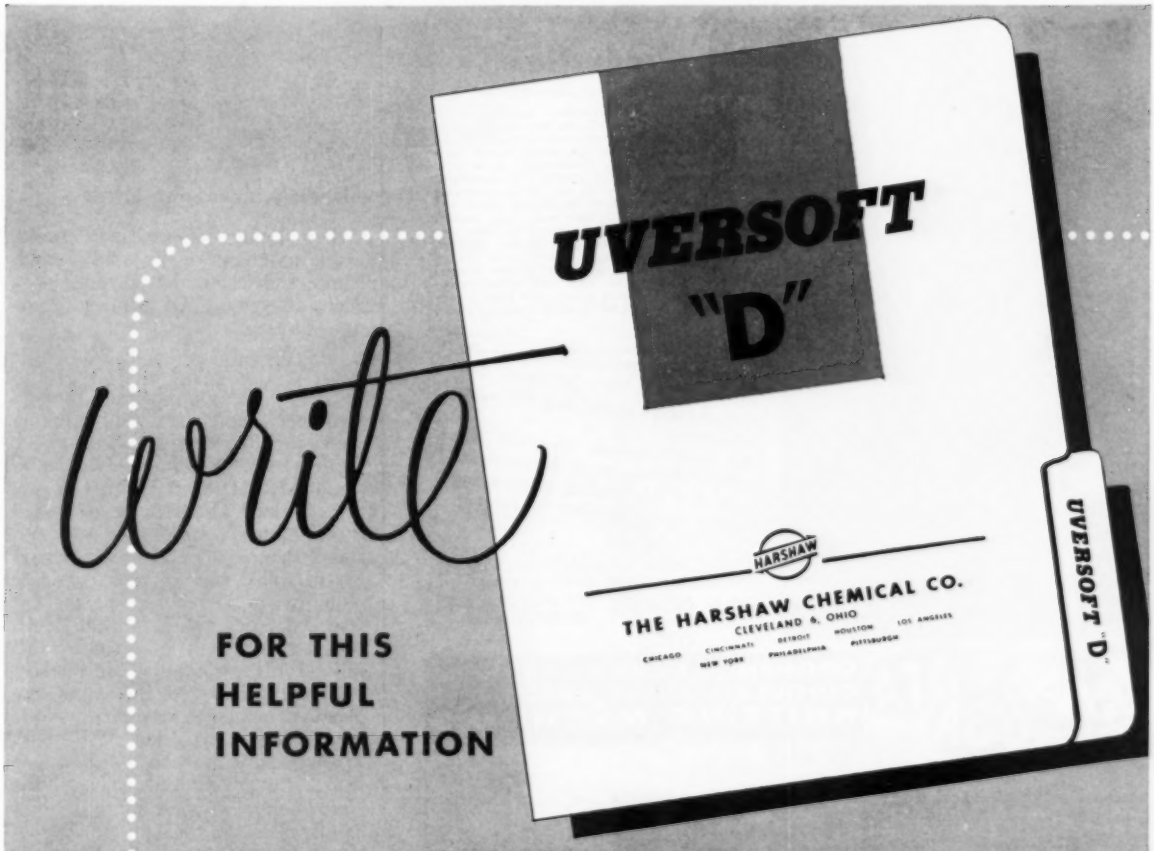
This system helps productivity at Standard and has cut down lap damage in storage and transport.

WOOL-TOP DYEING

CONTINUED FROM PAGE 111

and the top is ready to be taken from the dyeing machine.

After dyeing, the tops are set out on a clean area behind the backwasher-er-dryer range. The tops are laid out, and the ends are guided through a creel board fitted with small porcelain pot-eyes. The ends are put through a soap-and-soda-ash solution at 105° F., squeezed through nip rolls, and given two rinses in the second and third bowls of the washer. Then the strands pass into the dryer,



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UVERSOFT "D" is a cationic surface active agent which produces a full, soft hand with little, if any, reduction in moisture absorbency of the TREATED material. It can be exhausted from a long bath, and has an excellent retention in an aqueous system. UVERSOFT "D" provides a maximum economy in application and use.

UVERSOFT "D" is an outstanding anti-static agent. It should be considered for situations where the accompanying softening action is not objectionable.

Send for folder containing complete technical information.

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The Harshaw Chemical Company

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● High-speed, trouble-free operation assured by simplicity of design, sound engineering, precision unit-construction of all sub-assemblies. Wide operating range, new refinements, increase production up to 20%
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ORDNANCE machines are available in 18", 20", 22" and 24" with 8 feeds; in 30" and 32" with 12 feeds.
To meet todays demand for JERSEY fabrics let us demonstrate our OTSA model, embodying many new exclusive features!

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EXCLUSIVE SALES REPRESENTATIVE
MAC M. ROTHKOPF 317 BUSHWICK AVE. BROOKLYN, N. Y.

OTSA OGA OTA
ORDNANCE GAUGE
CIRCULAR, FULLY AUTOMATIC
KNITTING MACHINES

COLLINS (TWO TWISTERS IN ONE)

TWO TWISTERS IN ONE

The Collins C/B Novelty Twister with DUAL-DRIVE AND ULTROHEAD *FOR ALL YARNS*

The Collins C/B Novelty Twister is considered TWO TWISTER in ONE because each side of the frame can be run independently of the other side in regard to direction of twist, speed and yarn construction. This tape-driven dual-drive arrangement affords unlimited flexibility for the production of novelty and ordinary ply yarns.

The ULTROHEAD attachment is the most advanced mechanism ever developed for producing the widest possible construction variations in Splash, Nub, Seed, Bouclé, and Ratiné yarns.

The Collins C/B Novelty Twister was a star performer at Atlantic City and Greenville Shows. Today, mills are daily acclaiming its outstanding cost-cutting performance and wide versatility. THERE IS A COLLINS TWISTER FOR EVERY PLY YARN CONSTRUCTION.

COLLINS BROS.
MACHINE COMPANY
647 Roosevelt Ave.
Pawtucket, Rhode Island

Builders of Novelty, Ply, Big Ring, Beam, Cabling, Wet, Trap, Rayon, Paper, Glass, Sample and Special Twisters for all yarns.

CHARLOTTE CHICAGO TORONTO
est. 1866

where hot air at a temperature of 210 to 220° F. removes the moisture.

At the end of the dryer is a Holdsworth four-head intersecting gill box through which the top is drawn and reballed.

Blending Makes the Shade

Top dyeing depends upon considerable reworking of the wool through combs, gill boxes, and pin drafters to arrive at even-colored yarns of the required shade.

The first reshuffling of fiber starts at the gill boxes set up as a part of the dryer. The top progresses through blending, intermediate, and finishing stages in three lines of gill boxes.

Model has several Noble combs in operation that blend 72 ends of top into one end. Yarn to be recombed is run through mixers and can gills and is then reballed. The right number of balled tops of each color are mounted on a creel behind the gill box, and a new top is formed. Eighteen four-end balls prepared in this way go to the comb and are blended into one strand. At this point the blend appears much smoother, but one more blending is needed.

To get this finishing touch, 24 or more cans of combed top are first placed behind a Prince-Smith & Stells Autoleveller, and the ends are all combined into one strand. Following the pass through the Autoleveller, the top goes through a Warner & Swasey pin drafter and is reballed for shipment.

Vigoureux Printing Makes Good Blends

Model does considerable vigoureux printing on high-grade top. In this process, 10 to 12 ends are led through a creel board and pulled by feed rolls toward the nip formed by a slotted brass roll and a felt-covered roll. The felt-covered roll is fed color from a rubber roll that revolves in a color box below.

For this type of work, the dye is mixed with a gum to form a fairly heavy paste similar to the type used in cotton printing. As the top passes through the nip, bars of color (corresponding to the raised portions of the brass roll) are pressed into the sliver. The sliver is carried over the machine by a reel and laid in loops behind the machine.

After printing, the sliver is bundled and tied for easy handling and placed on racks. The racks are slid into an autoclave and steamed at 5 lbs. pressure for 2 hrs. Steaming develops and fastens the color on the fiber.

After steaming, the top is back-

CONTINUED ON PAGE 190

The Laurel Leaf

BUSINESS MAGAZINE EDITION

Laurel PYROSAN A—a *different* kind of fire retardant—is a product which merits your serious consideration. If your goods require a fire retardant finish, and a non-permanent product will do the job, consider these properties: (1) No boardy hand, (2) No damp saggy hand, (3) No efflorescence or crystalizing on the fabric, (4) A soft, pleasing hand, (5) A colorless liquid product which is easy to use, and may be diluted cold and used cold, with no time consuming predissolving necessary, (6) Highly effective, no afterflowing and a minimum of afterglow, and (7) No crystalizing or decomposition in storage. Like a free sample? Write.

Here is a truly cold water dispersible wax emulsion for winding trough work. Laurel WAX EMULSION WG, proved over the years, has been improved for easier handling. Now, if hot water is a problem in your winding room, the answer is easy: use WAX EMULSION WG—and at no sacrifice in active content! It is recommended highly for the treating of cotton, wool, Orlon, and other pure and blended spun knitting and sewing yarns. It imparts lubrication, softness, and conditioning to the yarn and thereby improves running properties. It may be applied to natural, mercerized, or dyed yarns, and it is easily removed from finished garments in a regular scour. It won't turn rancid, cause odors, yellow whites, or change shades of dyed goods. And, when applied to sewing threads it often eliminates the need for hot waxing or other treatments. Why not take a tip from the leaders . . . order some Laurel WAX EMULSION WG—*now!* Samples, too, are available on request.

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Warehouses: Paterson, N. J., Chattanooga, Tenn., Charlotte, N. C.

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Capacity: ⅛" to 2" pipe; ¼" to 2" bolts or rod.

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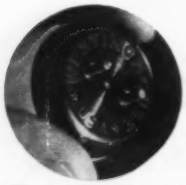
For more data, write this page number on Reader-Service card. →

Ask these questions, too, when you judge a fluorescent lamp...

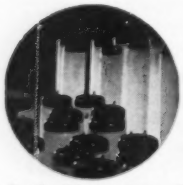
Is your investment protected?

Check Westinghouse Fluorescent Lamps against any other brands you are now using. Check them for maintained brightness, long life, uniform appearance. If you are not entirely satisfied on all counts, your full purchase price will be refunded.



Is it easy to seat securely?

Westinghouse fluorescent lamps are built with "guide bumps" on the end-caps. Easily felt with the fingers during lamp installation, they tell at a touch when the lamp has been securely seated in its sockets.



Is it the correct type, size and color for the lighting job to be done?

In the Westinghouse fluorescent family of 290 different lamps—including Slimline and Rapid Start—there's a type and size precisely right for every office, plant and merchandising application. Colors include seven different shades of "white" alone.

For the full story on how to get more for your money in fluorescent light, contact your Westinghouse Lamp Representative.

WATCH WESTINGHOUSE

*WHERE **BIG** THINGS ARE HAPPENING FOR **YOU!***

MILL MAINTENANCE

Better Painting Methods Make Paints Last Longer

The objective of a planned maintenance painting program is to lengthen the cycle between paintings. This objective can be achieved by: (1) using high-quality paints designed for the desired end use, (2) following good application practices, and (3) taking advantage of improved products and methods as they become available.

To insure maximum returns for every dollar spent for paints and painting, the cost of labor and material per square foot per year should not be used as a measure of value. True costs are not determined solely by the price of the paint. No matter how much you pay for paint or how carefully you select quality, from 40 to 90% of your painting dollar goes to labor.

Prepare the Surface

Before a surface is painted, remove dirt, dust, oil, grease, exuded sap, pitch, loose rust, loose mill scale, calcimine, or any other interfering substances. Don't prepare any surface that isn't primed the same day.

The type of surfaces, flat or irregular, and the condition of surfaces determine the methods and tools for surface preparation. When power-driven wire brushes are used, avoid burnishing.

Remove dirt and dust by hand or by washing with a detergent and water. In some instances, dirt and dust can be removed by vacuum or a bristle brush.

Remove oil and grease with a solvent or wash the surface with a power cleaning gun. The solvent must be free of oil and should be approved by the local safety supervisor.

More-Drastic Methods

To remove old paint, use a blow torch, paint remover, or a hand or power-driven paint scraper.

Where water paints have been used, clean the surface with a scraper, wire brush, or live steam. When water paints cannot be completely removed from interior surfaces, use a special primer.

Gloss of previously painted surfaces should be removed with sandpaper. Remove heavy deposits of mildew by scraping the surface or by washing it thoroughly with a solution of trisodium phosphate, 1½ oz. to a gallon of water. Then rinse the surface with water.

When To Paint

The most-favorable temperature range for coating application is 60 to 90° F. Don't apply any coating below 40° F. Temperatures above 90° F. cause rapid drying and consequently poor brushing, which might result in pinholes.

Avoid applying coatings when the humidity is high enough to cause moisture condensation on the surface. The presence of moisture primarily affects the adhesion.

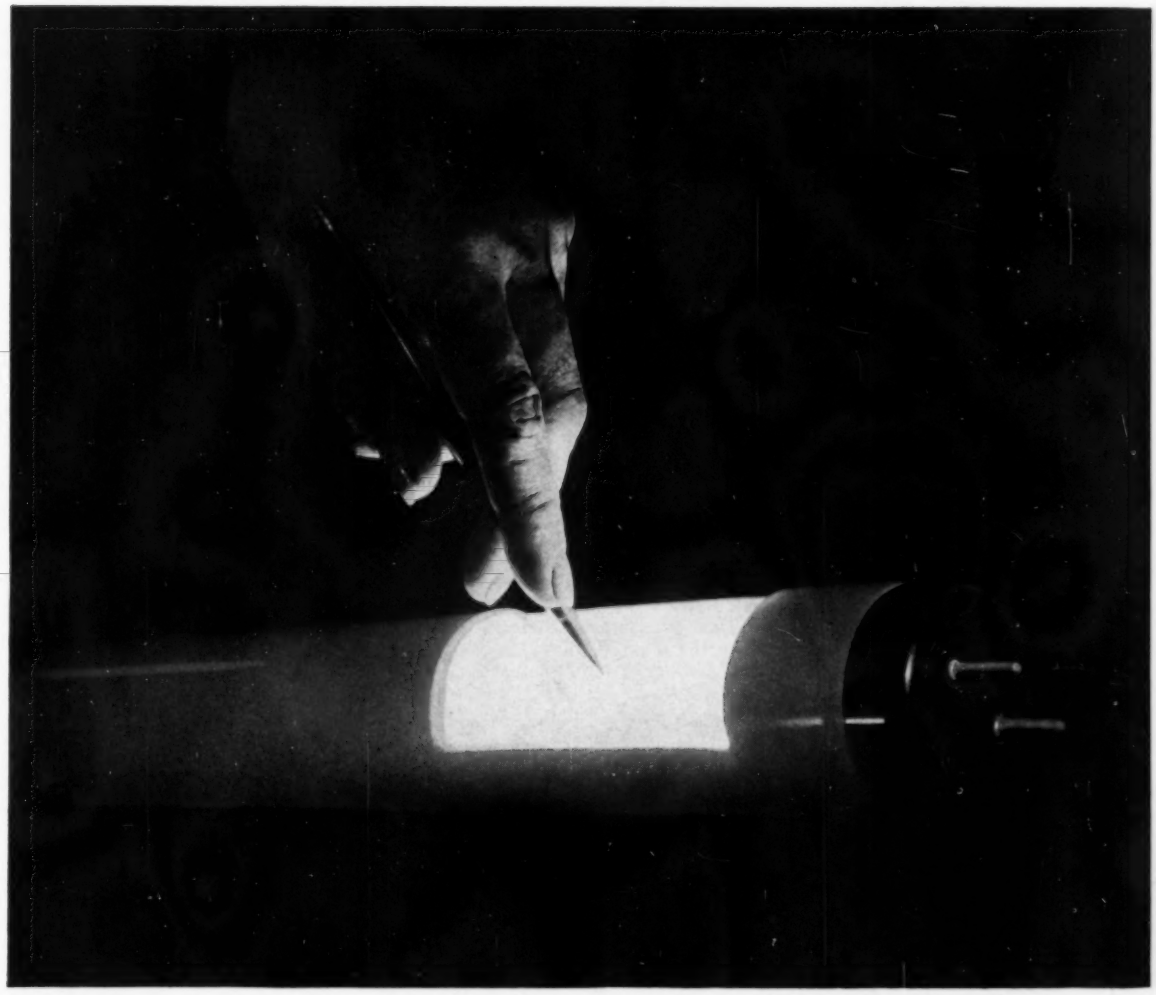
Don't paint outdoor surfaces when winds are of such velocity that they (1) carry dust and dirt or (2) interfere with spray painting when it is used.

Don't paint in the rain because (1) it causes poor adhesion, (2) it might wash off the coating, and (3) in chemically contaminated atmospheres, it actually deposits chemical solutions on the surface.

In areas that contain chemicals, complete the painting within the shortest possible time, consistent with proper drying of each coat, to avoid chemical contamination between coats. When overnight drying is required, flush the surface with water containing a small amount of detergent. Then rinse off the detergent and dry with an air hose before additional coats are applied.

Several types of equipment are available for applying coatings. The most-economical equipment depends on the type of surface, size of job, type

how to judge a fluorescent lamp . . . point no. 6



ask about LUMEN MAINTENANCE

Building fluorescent lamps with high *initial* lumens—high light output when the lamps are new—is difficult enough. But the real trick is to build them with high "lumen maintenance" —high light output over their entire long life. Lumen maintenance depends largely upon the stability of the lamp "phosphor"—the light-producing coating inside the glass tube. Stable phosphors give high lumen maintenance; unstable phosphors do not. Tops for stability among the different types of phosphors now in use are *Halo* Phosphors. Westinghouse (and only Westinghouse) uses Halo Phosphors throughout its whole fluorescent lamp line.

WATCH WESTINGHOUSE

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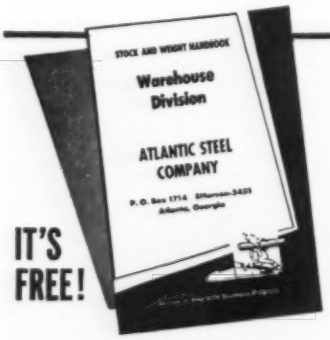
Every Textile Mill Needs This Steel Handbook



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of coating material, and other factors.

Use a brush that is designed for the specific surface being painted, and be sure the brush is clean. Brush the coating on in an even, uniform thickness over a square-foot area at once.

In addition to a regular hand brush, a pressure-feed brush can be used on some surfaces to reduce dipping time. But the pressure brush should not be used (1) for areas where make-ready and put-away time offsets the advantage of reduced dipping time and (2) for overhead work.

How To Spray

Spraying equipment must be kept clean and in good working order. Use an agitator-type pot to keep the coating well mixed. Provide effective traps to keep air lines free from oil and moisture.

Make the spray stroke with a free arm motion. Keep the path parallel and the gun-nozzle direction perpendicular to the surface at all points of the stroke.

For thin film coatings, feather out the ends of the strokes by triggering the gun. To trigger, begin the stroke before the trigger is pulled and release the trigger just before the stroke is ended. Arcing the gun results in uneven application and excessive overspray at the ends of the stroke. *E. I. du Pont de Nemours & Co., Inc.*

WOOL-TOP DYEING

CONTINUED FROM PAGE 186

washed and put through the three sets of blending equipment in the same way as the dyed stock.

Vigoureux printing is slightly more expensive but is considered to produce a more-even effect in the finished cloth.

WEAVING WASTE

CONTINUED FROM PAGE 117

perfect cloth. If the cloth sells for 60¢ a yd., the off-goods may bring 40¢; or in small pieces, these rags may sell for only about 12¢ a yd.

— Tying in

Much cloth is wasted at warp-out. When a portable tying-in machine is used, the knots must be pulled through the drop wires, harnesses, and reed. Both cloth and warp yarn are wasted in this operation. Some of this waste is unavoidable, but it is surprising how much needless waste can be prevented by properly training the operators and weighing their waste daily.

When stationary tying-in machines are used and the pattern is removed from the loom at warp-out, cloth can be wasted when the pattern is removed and also when it is replaced. A strip of cloth or apron is left on the pattern to be tied to the end of the cloth on the loom. Some waste of cloth and yarn is unavoidable, but just a few inches of unnecessary waste per loom will amount to many yards of wasted cloth per week.

— Cloth Doffing

Cloth is sometimes ruined when a roll is doffed from the loom. In the case of a new warp being tied in, the doffer will sometimes cut the cloth a foot or more from the knots. This cloth is all waste. The doffer may punch holes in the cloth or let it strike a sharp projection of the loom and cause many yards of waste.

— Other Causes

There are other examples of cloth waste such as cloth damage in transit, cloth torn off and used for cleaning rags, cloth damaged by a burst shuttle or other malfunction of the loom.

And then there is always some waste of cloth that employees carry out of the mill. This practice is not exactly stealing in the strict sense of the word because most of the cloth is just rags that are carried out in the pocket or lunch box. But there is always the possibility of stealing, especially of high-priced fabrics; and this loss can reach serious proportions unless it is controlled.

3. Waste of Supplies

The waste of supplies in a weave room is mostly the requisitioning and use of unneeded loom parts, the installation of parts in a manner that does not give maximum service, and careless loom operation that breaks or damages the parts.

A shuttle costs about $4; and many other items such as pickers, binders, etc. are usually put on the loom when a new shuttle is installed. So for parts alone it will cost at least $6 to put in a shuttle that will give about three months' service. If the service life of each shuttle can be increased just one day, a sizable saving can be realized.

Other types of supply waste are brooms discarded before they are worn out or brooms that have handles broken or otherwise damaged; lamps burned out because of rough handling

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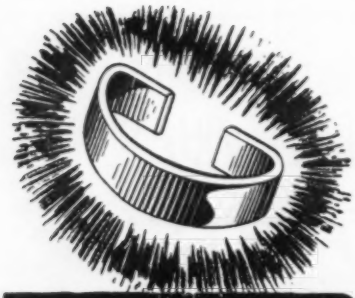

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during cleaning or because of defective sockets, wiring, or switches; broken cloth tubes; damaged trucks and boxes; air and water hose ruined by being left where they can be cut by wheels, casters, or moving loom parts; and wasteful use of many other items of supply down to and including pencils.

4. Waste of Effort

The individual items of wasted labor in the average weave room are minor, but taken as a whole this waste is appalling. There is all the labor that is wasted in the production of off-quality cloth and rags and in attempts to repair or salvage some of the soiled or damaged cloth and yarn. There is a waste of labor in making repairs necessary because of parts wearing out prematurely or being broken through carelessness.

There is a waste of labor as a result of improper training and of employees doing things the hard way instead of using efficient step-saving methods. There is labor waste resulting from poor job arrangement and planning.

Some waste is caused by having a skilled operator do jobs that could be done just as well by a lower-paid, less-skilled employee. Then there is the ever-present waste of labor caused by laziness on the part of the employee who never misses a chance to kill time and dodge the boss.

Other causes of wasted labor are poor planning that results in waits for machines, materials, or parts; misunderstanding on the part of employees of just what they are supposed to do; too much time spent off the job smoking, eating, and other personal needs; and many other causes of lost or misplaced effort.

Waste Is Local Problem

It can be seen that the subject of weave-room waste has many angles, and it would require volumes to adequately probe them all. However, except for a similarity in general characteristics, weave-room waste is a local problem. Each mill must plan its operations for its own individual layout, and efforts to eliminate all types of waste must be tailored to fit the job.

Half the job of cutting waste, whether of labor, material, products, or parts, is in recognizing it as such. Many of the individual items of waste are of such a minor nature or are so well hidden that close study must be made to discover them.

Although many items of weave-room waste are negligible and others are of such a nature that prevention would cost more than the waste itself, there is an opportunity in most mills for a good showing in waste prevention.

For a waste-cutting program to be successful, each item should be carefully analyzed before action is taken. When a method has been worked out, it should be put in force and followed up. No program is self-sustaining, and the prevention of waste is no exception. In fact, there can be no let-up on the war against waste if maximum weave-room efficiency is desired.

HOW CARTEX CARDS

CONTINUED FROM PAGE 113

traditionally a producer of fine combed-cotton yarns, the management recently set up an entirely separate department to prepare nylon (or any other synthetic staple fiber) for spinning into specialty yarns when the market calls for them. This department, from picking through roving, is located in a building separate from the cotton mill.

Present weekly production of nylon yarn is about 9,000 lbs., compared with 40,000 lbs. of cotton yarns. Nylon roving, made from 1½- to 2-in., 1.5- to 3-den. staple, is spun into 10s to 50s yarn on the frames in the cotton mill. Ultimate uses are shoe laces, belts, and knitted fabrics.

In the nylon preparatory department, there is one two-process picker that produces a 12-oz., 35-yd. lap every 6 mins. Each picker section has one two-blade beater that runs 600 rpm.

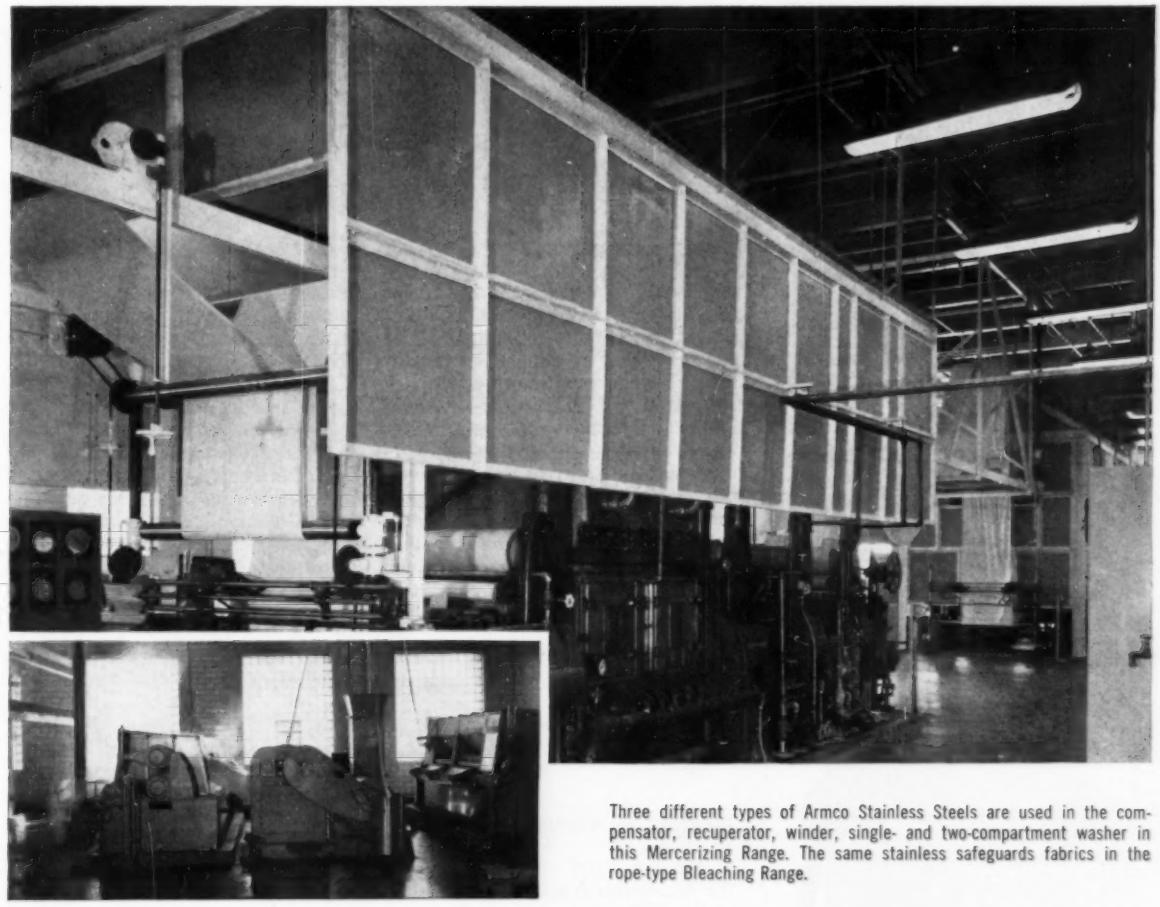
Cards Have Fancies

The cards, which have been equipped with fancies, produce a 46-grain sliver at 6 lbs. per hr. Card production could be increased but is sufficient for present requirements. Speeds and settings are standard.

Three-process drawing is used. The first process, eight-ends-up, has a draft of 8 and produces a 48-grain sliver at 130 ft. per min. Variation is 26%. The second process, six-ends-up, has a draft of 6 and produces a 50-grain sliver at 130 ft. per min.; variation is 21%. The third process, set up the same as the second, reduces variation to 18%.

Two processes of roving are used.

CONTINUED ON PAGE 194



Three different types of Armco Stainless Steels are used in the compensator, recuperator, winder, single- and two-compartment washer in this Mercerizing Range. The same stainless safeguards fabrics in the rope-type Bleaching Range.

3 Armco Stainless Steel Grades Safeguard Fabrics in Southern Mill

Three grades of Armco Stainless—Types 302, 304, and 316—safeguard fabrics when they're processed through this bleaching and finishing equipment in a southern textile mill.

In most textile processing, Armco Stainless Steels can help cut production costs and improve your products. Here's how:

- **cleaning expense drops**
- **maintenance costs go down**
- **rust spots are eliminated**
- **its smooth surface guards against snagging**
- **no boil-outs needed**
- **colors stay true**
- **service life is increased**

Many Grades

For every piece of equipment in a textile mill, there's *one* Armco Stainless grade that's best. In agers, kiers, and dye kettles, for example, where corrosion can be severe, there are the special Armco ELC grades, 304L and 316L. The extra low carbon content of these grades protects against the danger of corrosion near welds.

Keep these advantages in mind when you consult with your equipment manufacturer. If you'd like to know the names of leading textile equipment suppliers who use Armco Stainless Steels, just write us at the address below. We'll put you in touch with them.

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In the first process, Whitin 10x5 Inter-Draft frames produce 0.50-hk. roving. Front-roll speed is 160 rpm., spindle speed 800 rpm., and draft 9. A 1¾-lb. bobbin is made.

Whitin 8x4 frames are used to make a 4-hk. roving at the second process. Front-roll speed is 150 rpm., spindle speed 900 rpm., and draft 5.35. A 1-lb. bobbin is made.

TWIST VARIATIONS

CONTINUED FROM PAGE 115

packaged on a good, runnable beam. Any bad mechanical or yarn condition should be immediately recognized by any employee in the warper department and corrected immediately.

Package and other defects should be repaired at the warper and not allowed to go to slashing. Otherwise, there will be stops to repair yarn at the slasher creel. Such stops expose the whole sheet of warp yarn to the hot size box and cylinders and may cause hard size streaks or overdried warp streaks.

Tight cheeses should be cleaned up at the warper to prevent overstretched ends from getting into the slasher. Normal stretch at the slasher plus undue tension of tight ends will destroy yarn elasticity in the warp and greatly increase the number of warp stops on the loom.

Beams returning to warpers from slasher sets should be inspected carefully for faulty barrels, loose heads, and bent gudgeons. Good yarn on bad beam barrels is a common source of defects that ruin the quality of warps.

The common defects in spinning discussed here represent a wide-open opportunity for the enterprising spinner to make a name for himself by finding and correcting them. He can be sure that his efforts will show up where Worth Street pays off—in weaveroom efficiency and quality.

PICKING MOTIONS

CONTINUED FROM PAGE 123

of the lug strap; on the drive end, the measurement is from the bottom of the picker-stick shoe to the center of the lug strap. Good loomfixing, however, calls for keeping the lugs as high as possible.

Check Measurements Closely

Set the picker-stick stroke at 8½ ins. In setting the stroke on the drive end, be sure the shuttle is positioned in the box the correct depth; then measure 8½ ins. from the front of the picker, and set the stroke to that point.

Start the pick when the back box is 8 ins. from the breastbeam.

After a new picker stick, lug strap, power strap, or picker is put on, always reset the stroke and pick timing because the new parts change them.

The picker-rod strap (bumper) must stop the picker from ½ to 1 in. beyond the picker stick stroke on the head end. Never stop the picker before the end of the stroke.

Position the setscrew in the foot pedal of the shuttle ejector so it will not touch the picking-shaft stop; but the ejector must push the shuttle out of the box.

To remove a picking shaft from a loom, take the front bearing off and position the loom lay at front center. Then slip the shaft out of the back bearing with the back bearing still bolted tight to the loom.

COTTON-RAYON FAILLE

CONTINUED FROM PAGE 125

For crease-resistant finishes, the dyed goods are first dried and then run through a pad-tenter range, where the resin is applied and the goods partially dried. Care is taken to retain 12 to 15% moisture in the goods to leave them in shape for the embossing operation.

Embossing Turns the Trick

It is the embossing process that converts a common construction into glamour goods. The resin-treated and nearly dry fabrics are put through a gas-fired embossing calender that impresses the pattern of the hot

Celanese Contemporary Fibers engineered for specific end uses

Special fibers being developed to answer needs in Fashions, Home Furnishings, and Industry

1. ARNEL—the new Celanese ease-of-care triacetate fiber. Contributes great good looks to fabrics, plus machine washability, quick drying, little or no ironing. Fabrics of Arnel have an uncanny ability of resisting wrinkles and maximum shape retention. Used in all ready-to-wear.

2. ACETATE, the beauty fiber—the famous, beautiful fiber used for dress fabrics with elegant good looks. Combines with other fibers, notably cotton, for sportswear and year-round fabrics.

3. CELAPERM, the acetate yarn with "sealed-in" color—the rich, lustrous yarn with color sealed against streaking and washing out. Has captured bathing suit market, is woven with cotton for sportswear and children's clothes.

4. BULKED ACETATE—new bulked filament yarn now available in acetate or Celaperm. Important for new lofted look and dry, crisp hand of apparel and home furnishings fabrics.

5. CRYSTAL YARN—filament acetate yarn with high reflective power. Brilliant sparkle and firm hand make it important in party dresses, decorative fabrics.

6. QUILTICEL—the permanently bonded interlining made entirely of acetate. Does not lose its shape in washing, has warmth of comparable wool interlinings, resists moths and mildew, sews easily. Used in all quilted apparel.

7. FORTISAN—the super-strong rayon with great dimensional stability. Used for home furnishings sheers, and as a strength-giving warp yarn in textured decorative fabrics.

8. FORTISAN-36—a high denier super-strong rayon yarn developed especially for the industrial field, having high tensile strength, dimensional stability, and light weight. Mechanical rubber goods, plastic laminates, paper reinforcements.

9. RAYON—filament yarn, bright and dull luster, and continuous tow.

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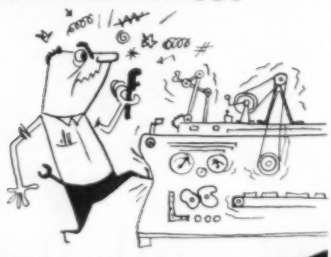

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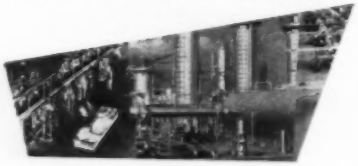

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steel roll into the goods. Various effects are produced according to the roll pattern.

After embossing, the goods are put through a curing range to complete fixation of the resin and water repellent.

The cured goods are not afterwashed because the clarity and detail of the embossing would be affected.

Although many of the styles have low residual shrinkage, dry-cleaning is recommended to the consumer because it has less effect on the surface of the goods.

When given a crush-resistant finish and a final run on the embossing calender, the fabrics become more easily cared for and retain their fresh look longer. Plain-finished failles in the bengaline class wrinkle easily and grow shiny at points of wear. The broken surface of the embossed failles is less susceptible to these faults.

POINTERS

CONTINUED FROM PAGE 127

Men in responsible supervisory jobs should have emotional stability. They should be able to stand up under pressure, take a certain number of knocks, and accept them as part of the job. If they think they are sick because they do a little sweating in tense and difficult situations, then there is some question as to whether they are suited to the demands of supervisory and higher management responsibility.

5. "He must be a man of good habits, and his neighbors must think well of him."

Supervision, in important measure, is leadership. Most of us want to work for a man we can respect. We may not necessarily like him, but we will scarcely be inspired in our own performance if we do not respect him. The supervisor with sloppy work habits and careless personal and moral habits, on or off the job, does not set the kind of example that calls for the respect of his subordinates. He is deficient in one of the qualities of leadership.

Supervision calls for the ability to work effectively through and with other people. The supervisor not only is responsible for managing the work of the employees under him but also has the obligation to work with associate supervisors, staff and administrative personnel, and of course higher management. He should be capable of team work and not be a "loner" who goes his own way, oblivious to the need for cooperation with others.

It follows logically that if he is not a man of whom his neighbors think well, it is probable that he lacks in some degree the ability to get along with and work effectively with other people.

Let's conclude by going back to the beginning. How do you measure up to the qualities our Secretary of Defense says are important in management material?

EQUIPMENT AND SUPPLY NEWS

CONTINUED FROM PAGE 138

Plastic Jacquard Cards

Jacquard cards made from plastic have been developed by Imperial Chemical Industries Ltd., London, England. The cards are said to be very durable and aren't affected by humidity or water.

They are punched and laced on present machines. When corrections or modifications to cards are necessary, a piece of foil can be cemented over the area.

Circle T-21 on Reader-Service Card

Polyethylene Bags

Stock sizes of tubular polyethylene bags are being offered by Dobeckmun Co., Cleveland, Ohio. Designed for gloves, shirts, and sweaters, the bags are available in 5x12-, 10x16-, and 11x17-in. sizes.

Circle T-22 on Reader-Service Card

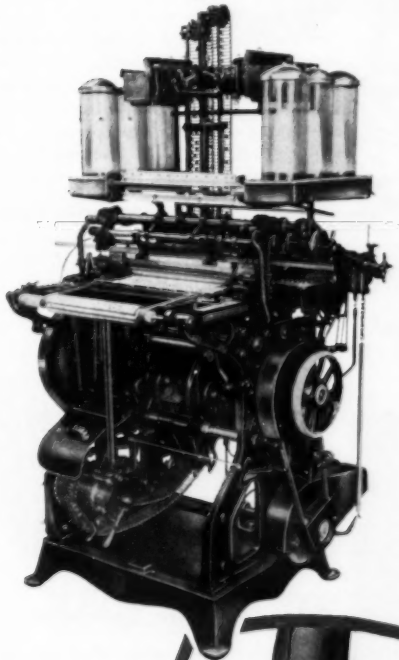
After-Waxing Applicator

An after-wax for Dacron, nylon, and other synthetics has been marketed by Bryant Chemical Corp., North Quincy 1, Mass. Applied in a newly designed applicator, the product is emulsifiable and will not gum up at the slasher or cause finishing troubles.

Circle T-23 on Reader-Service Card

CONTINUED ON PAGE 198

DEPEND ON THE WILDMAN 75 TO DELIVER



Here is the Full-Fashioned Hosiery Machine that is keyed to today's tough production-cost needs . . . it is ruggedly built to stand up for full schedule output of fine, tightly knit, high elasticity — long wearing, fine hosiery. Trouble-free, avoid costly stoppages. Factory assembled and tested. Easily, quickly installed in your plant.

AND — so sure-fire in performance that 1 operator can easily attend anywhere from 1 to 30 machines.

You'll be proud of the product — and you'll give the dealer a product he can readily sell — for the value is in the looks . . . in the feel and long, comfortable wear . . . all readily recognized by the style-wise shopper.

Literature or Demonstration or both . . . on request.

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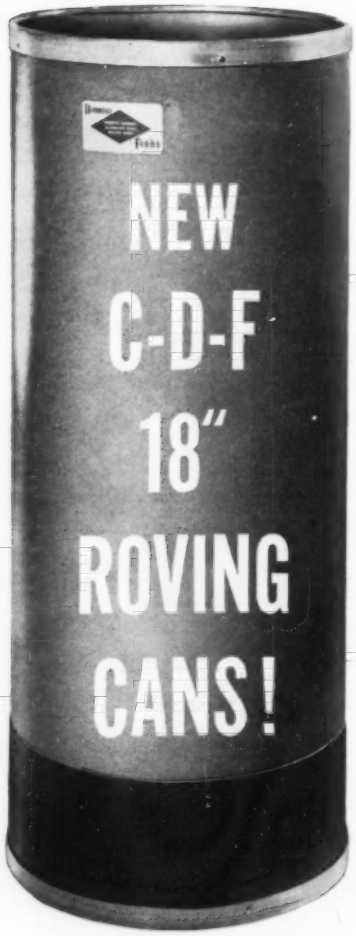

TOP QUALITY!
FAST DELIVERY!

Now you can get genuine Diamond Fibre Roving Cans in the popular 18" size faster and better! Production has been increased to meet all demands for this size. Stocks are big enough for prompt delivery of these superior cans.

Diamond Fibre seamless cans are strong, tough, smooth, with a long work life. Interior has a porcelain-like surface which will not crack, chip, or soften. Choice of steel top rim, rolled fibre top rim for running synthetics, or reinforced turned fibre rim.

Get in touch with C-D-F's Textile Headquarters at 834 Hayne Street, Spartanburg, So. Carolina (call Spartanburg 3-6397). Write for new folder and Receptacles Catalog showing all C-D-F roving cans, trucks, boxes, loom parts.

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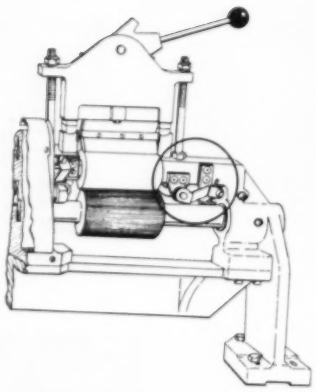
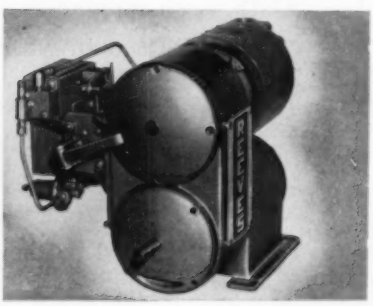


Pin-Drafter Stop Motion

A new lap-detector stop-motion unit, designed to prevent uneven delivery of stock and equipment damage, is now available for Warner & Swasey dual-can, quad-can, or ball-delivery pin drafters. This lap detector, built by Warner & Swasey Co., 5701 Carnegie Ave., Cleveland 3, Ohio, can be installed on all machines not originally equipped with the device.

Mounted on both sides of the pin drafter's pressure roll or cot brackets, the new lap detector automatically stops the machine if laps form or build up on the drafting or pressure rolls.

Circle T-24 on Reader-Service Card



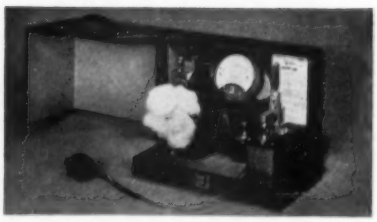
Motor Drive

A series of fractional-horsepower variable-speed motors is announced by Reeves Div., Reliance Electric & Engineering Co., Columbus, Ind.

Its main use is in continuous-processing applications where the drive speed is required to vary automatically with changes in liquid level, pressure, temperature, flow, weight, position, and color.

This control has been available previously on Reeves Motodrives from 1 to 40 hp.

Circle T-25 on Reader-Service Card



Portable Arealometer

A portable Arealometer, which weighs 15 lbs. and is housed in a 13x9x11-in. leather carrying case, has been announced by Special Instruments Laboratory, Inc., 312 W. Vine Ave., Knoxville, Tenn.

Called Port-Ar, the instrument measures the permeability of an eight-gram sample of cotton. Calibration is in microns-equivalent fiber thickness and also in Micronaire index.

Operation is simple; after the instrument is zeroed in and the sample is adjusted to eight grams, the cotton is placed in the testing cylinder where it is held by compression clamps. A few pumps of the atomizer bulb, and the operator reads the fineness directly from a scale.

Circle T-26 on Reader-Service Card

Color-Tolerance Computer

An electronic color-tolerance computer has been announced by Instrument Development Laboratories, Needham Heights, Mass.

The instrument is designed to be used with a color photometer and computes color deviations that are expressed in a number on a single dial. National Bureau of Standards units are used as a basis for computing color deviations as to light-dark, red-green, or yellow-blue components.

The manufacturers claim that dye formulas are quickly corrected by referring to the standard-deviation figure provided by the machine.

Circle T-27 on Reader-Service Card

CONTINUED ON PAGE 200

Service

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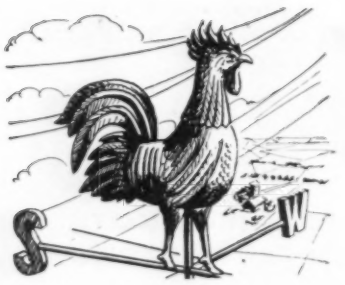

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WORLD-FAMOUS, too . . . in textile manufacturing is the ever-dependable

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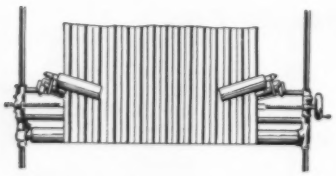
* minimizing costly equipment repair "down-time"
* eliminating double edges and spattering
* speeding fabric processing
* preventing woven fabric spoilage
* maintaining cloth alignment and constant width



Add to all the above advantages: no weights, levers, nor linkages to bother with, extremely low initial and operating costs, infinite adjustability to handle fabrics from the lightest to #8 duck, even in operation . . . then you'll understand why MECHO is considered the greatest buy in Guiders! *ORDER yours TO-DAY*. You'll wonder how you ever got along without it.

FREE! Write for Catalog and ask about MECHO's complete Guiding Service, standard in hundreds of finishing plants handling semi-rigid plastics, artificial leather and rubber, felt, and gauze. Stainless steel, acid- and moisture-resistant units with sealed bearings also available.

GUIDER SPECIALTY COMPANY
427 W. Rock Ave.,
New Haven 15, Conn.

Covering for Concrete

A corrosionproof floor material to be applied directly over concrete is announced by The Ceilcote Co., Inc., 4924 Ridge Rd., Cleveland 9, Ohio. The product, called Coro-Crete, can be handled like cement and is applied in thicknesses of ¼ to ⅜ in. per layer. It cures in only a few hours to a dense surface that withstands solvents and acids.

Circle T-28 on Reader-Service Card

Rheostat for Battery Test

A simple water rheostat for test-discharging batteries to determine battery condition has been designed by Gould-National Batteries, Inc., Trenton, N. J. Standard 55-gal. steel drums commonly used in industry are filled with salt water to form the principal resistance elements.

Circle T-29 on Reader-Service Card

Palletless Handling

An industrial trailer specifically designed for palletless handling has been announced by Mercury Mfg. Co., 4044 S. Halsted St., Chicago 9, Ill. Standard wood- or steel-deck construction has been replaced with 4x¼-in. bar stock, which is rounded on each end in oblong shape and welded to the frame at 2-in. intervals. Fork trucks insert multiple forks between the bars to pick up loads.

Circle T-30 on Reader-Service Card

Steel Dowel Pins

Dowel pins ranging in size from ⅛-in. dia. by ⅜ in. long to 1-in. dia. by 6 ins. long are available from The Bristol Co., Socket Screw Div., Waterbury 20, Conn. They are offered in two standard sizes: 0.0002 in. over the listed diameter for regular use, and 0.001 in. over the listed diameter for oversize service.

Circle T-31 on Reader-Service Card

Acoustical Baffle

A low-cost, lightweight acoustical baffle that reduces noise up to 60% has been introduced by L. O. F. Glass Fibers Co., 1810 Madison Ave., Toledo 1, Ohio. The baffle is flameproof.

Circle T-32 on Reader-Service Card

Device To Bend Tubing

A device to bend stainless-steel tubing is capable of producing a bend up to 180° in one operation. The device bends tubes of ¼-, ⅜-, ½-, ⅝-, and ¾-in. outside diameter. The tool can be clamped in a bench vise or mounted on a workbench. The manufacturer is Parker Appliance Co., 17,325 Euclid Ave., Cleveland 12, Ohio.

Circle T-33 on Reader-Service Card

Vacuum Switch

A low-pressure switch, the Cat.-110V Vacuum Static-Pressure Control, has been announced by Henry G. Dietz Co., 12-16 Astoria Blvd., Long Island City 2, N. Y. The unit is for use on very low vacuums where regulation is required in inches of water column. It is applicable for use in combustion equipment and air conditioning.

Circle T-34 on Reader-Service Card

Conduit for Lead Wires

Electric-cartridge-heater lead wires are given complete moisture and vapor protection by a new flexible, rustproof brass conduit. The conduit, announced by Edwin L. Weigand Co., 7500 Thomas Blvd., Pittsburgh 8, Pa., has locking spirals to protect against moisture leakages.

Circle T-35 on Reader-Service Card

Valve Connection

A spherical union connection for valves that compensates for up to 10° misalignment of vessel tappings in any direction has been announced by Jerguson Gage & Valve Co., 80 Fellsway, Somerville 45, Mass.

Circle T-36 on Reader-Service Card

Tester for Annunciator

A testing device for checking the performance of plug-in relays and flashers used in Panalarm annunciator systems has been announced by Panellit, Inc., 7401 N. Hamlin Ave., Skokie, Ill. All changes of internal circuitry are accomplished by a single rotary switch.

Circle T-37 on Reader-Service Card

Redesigned Gate Valve

The No. 430 125-lb. brass rising-stem double-wedge disk gate valve has

TORRINGTON

NB SERIES NEEDLE BEARINGS

For Oscillating Motion or Heavy Rolling Loads

Torrington NB Series Needle Bearings employ the same needle roller principle as the famous DC Type Bearing.

They are available in the five types illustrated, all being of nonseparable construction and designed for periodic relubrication. Outer and inner races are of high carbon, chrome steel, hardened and precision ground.

Like the DC Type, the compact design of NB Series Needle Bearings permits saving in size and weight of surrounding parts.

Torrington NB Series Needle Bearings have been used extensively in the aircraft industry and for ordnance work where their extremely high static capacity and anti-friction characteristics enable them to withstand heavy impact loads.

Designs can be modified to meet industrial applications involving rotating motion.

Type NBC—oscillating motion only. Designed specifically for applications in which the OD is supported by a housing and the washers are backed up by clamping surfaces.

Types NBE and NBK—oscillating motion only. Self-aligning. Designed for applications where it is difficult to obtain alignment during assembly or where deflections make a self-aligning bearing desirable.

Types NBF and NBL—heavy rolling loads. Designed for use as rollers under heavy loads at slow speeds.

See our new Needle Bearing Catalog in the 1955 Sweet's Product Design File—or write direct for Catalog No. 55.

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GRATON AND KNIGHT
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LEATHERS
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been redesigned by Crane Co., 836 S. Michigan Ave., Chicago 5, Ill. The body neck is now cylindrical to offer maximum strength in the body structure, which eliminates the need for massive wall sections.

Circle T-38 on Reader-Service Card

Pneumatic Switching Valve

A pneumatically operated switching valve for dual-pressure pneumatic-control systems has been announced by Johnson Service Co., Milwaukee, Wis. Called the V-132 switching valve, the exhausting three-way valve will switch automatically on a dual-supply pressure change.

Circle T-39 on Reader-Service Card

Thermocouple Connector

A small thermocouple connector that requires little installation time has been announced by Thermo-Couple Products Co., Melrose Park, Ill. There are only two screws in the complete unit; only a pencil soldering iron, solder, and a small screwdriver are needed for installation.

Circle T-40 on Reader-Service Card

Titrometer

Redesigned for closer accuracy, the Precision-Dow Dual Recordomatic Titrometer announced by Precision Scientific Co., 3737 W. Cortland St., Chicago 47, Ill., titrates, automatically controls the rate of reagent-feeding, and automatically plots titration curves.

Circle T-41 on Reader-Service Card

Control Valves

A standard line of control valves, the S-3000 Series, has been announced by Hammel-Dahl Co., 175 Post Rd., Warwick Industrial Park, Providence 5, R. I. Single-seat-construction valves are offered in nominal sizes from ½ through 8 ins.

Circle T-42 on Reader-Service Card

Tape Sealer

A single-strip tape sealer for containers has been announced by General Corrugated Machinery Co., Palisades Park, N. J. The machine automatically tapes 25 or more cases per minute.

Circle T-43 on Reader-Service Card

Type Holder

The Model HTS Mecco Safety Type Holder announced by M. E. Cunningham Co., 1025 Chateau St., Pittsburgh 33, Pa., was designed for special marking operations where type has to be quickly changed after one or two impressions. A thumbscrew that holds the type securely in place speeds type changing.

Circle T-44 on Reader-Service Card

Chemical Pump

An all-purpose chemical pump that will handle any corrosive liquid except molten alkali metals or fluorine at elevated temperatures has been marketed by O. K. Machine & Tool Co., Inc., Waco, Tex. Liquids to be pumped contact only Teflon, and there are no seals or glands of any kind. The pump will deliver 300 gals. per hr. at 540 ft. elevation against a head of 12 ft. Multicylinder models are available.

Circle T-45 on Reader-Service Card

Centrifugal Clutch

A clutch designed by Mercury Clutch Div., Automatic Steel Products, Inc., Canton, Ohio, has been applied to drives on Whitin wool cards and spinning frames. Gradual starting provided by the clutch cuts down broken ends and eliminates fiber strain at condensers and doffers. The clutch does not engage until the motor comes to full speed.

Circle T-46 on Reader-Service Card

Water Conditioner

A water conditioner that does not use chemicals and has no moving parts has been announced by Packard Mfg. Co., 2220 W. Beaver St., Jacksonville, Fla. Principles of nuclear physics are employed to treat water so that scale and corrosion in boilers and pipes are prevented. The conditioner is available in capacities from 6½ to 1,760 gals. per min.

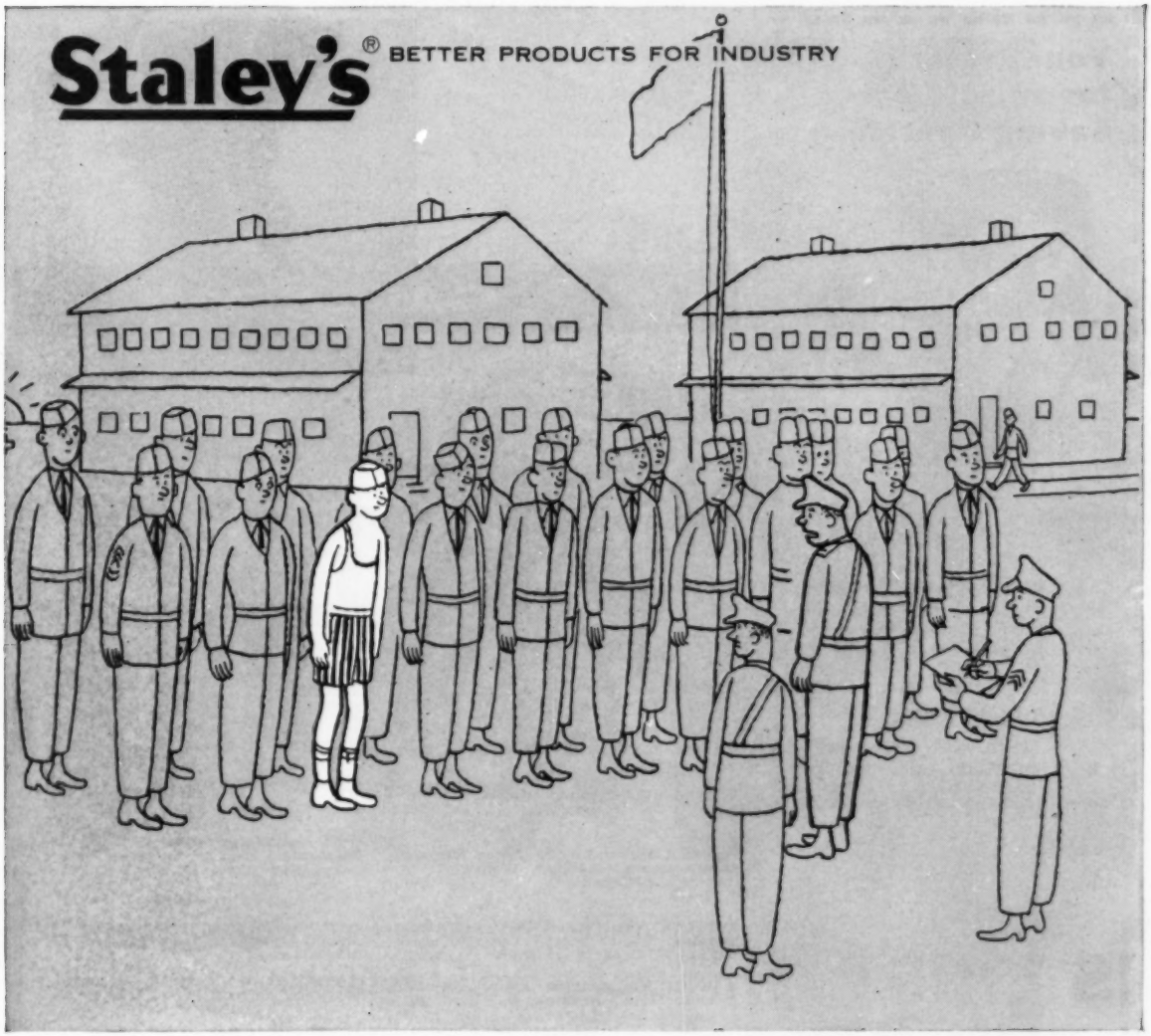
Circle T-47 on Reader-Service Card

Pneumatic-Tired Hand Truck

A stevedore truck with pneumatic tires has been announced by Hamilton Caster & Mfg. Co., Hamilton, Ohio. Rated at 400 lbs., the trucks reduce breakage of fragile goods and cut down wear on floors.

Circle T-48 on Reader-Service Card

Staley's® BETTER PRODUCTS FOR INDUSTRY



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IS THIS ——————→ **YOU?**

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that they can discover no one worthy of their ballots,
and then when someone terrible gets elected,
they say, "There, that's just what I expected!"
—Ogden Nash

GET READY, by being registered.

GET SET, by knowing what you're voting for. Then—GO VOTE!

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CALENDAR

August

Textile Technology Summer Program, Massachusetts Institute of Technology, Cambridge, Mass., August 20 to 31.

September

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Sept. 5.

The Fiber Society, fall meeting, Warwick Hotel, New York, N. Y., Sept. 6 & 7.

Perkin Centennial, Waldorf-Astoria Hotel, New York, N. Y., Sept. 10 to 15.

AATCC, national convention, Waldorf-Astoria Hotel, New York, N. Y., Sept. 13 to 15.

AATCC, Southeastern Sect., Hotel Ralston, Columbus, Ga., Sept. 22.

Combed Yarn Spinners Association, Cavalier Hotel, Virginia Beach, Va., Sept. 27 & 28.

National Association of Cotton Manufacturers, annual meeting, Wentworth-By-The-Sea, Portsmouth, N. H., Sept. 27 & 28.

Northern Textile Association, 4th Annual Meeting, Wentworth-By-The-Sea, Portsmouth, N. H., Sept. 27 & 28.

AATCC, Philadelphia Sect., Abraham Lincoln Hotel, Reading, Pa., Sept. 28.

October

Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 1 to 5.

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Oct. 3.

Chemical Finishing Conference, National Cotton Council of America, Hotel Statler, Washington, D. C., October 3 & 4.

AATCC, Piedmont Sect, annual meeting, Charlotte Hotel, Charlotte, N. C., Oct. 6.

North Carolina Textile Manufacturers Association, annual meeting, The Carolina Hotel, Pinehurst, N. C., Oct. 10 to 12.

Textile Operating Executives of Georgia, A. French Textile School, Georgia Institute of Technology, Atlanta, Ga., Oct. 13.

ASTM, Committee D-13, fall meeting, Warwick Hotel, New York, N. Y., Oct. 16 to 19.

International Knitting Machinery & Accessories Exhibition, Granby Halls, Leicester, England, October 17 to 27.

AATCC, Rhode Island Sect., Johnson's Hummocks Grille, Providence, R. I., Oct. 18.

Southern Textile Methods and Standards Association, fall meeting, Clemson House, Clemson, S. C., Oct. 18 & 19.

AATCC, Northern New England Sect., Science Park, Boston, Mass., Oct. 19.

Protective Packaging & Materials Handling Exposition, Kiel Auditorium, St. Louis, Mo., Oct. 21 to 24.

Carded Yarn Assn., annual meeting, Hotel Fort Sumter, Charleston, S. C., Oct. 24 & 25.

Carded Yarn Association, annual meeting, Hotel Fort Sumter, Charleston, S. C., Oct. 25 & 26.

Alabama TOE, fall meeting, Thach Auditorium, Auburn, Ala., Oct. 27.

November

South Carolina Textile Manufacturers Association, Personnel Div., Ocean Forest Hotel, Myrtle Beach, S. C., Nov. 1 & 2.

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Oct. 7.

AATCC, Western New England Sect., Rapp's Restaurant, Shelton, Conn., Nov. 16.

22nd National Exposition of Power and Mechanical Engineering, New York Coliseum, New York, N. Y., Nov. 26 to 30.

December

AATCC, Northern New England Sect., annual meeting, Hotel Vendome, Boston, Mass., Dec. 1.

AATCC, South Central Sect., Hotel Patten, Chattanooga, Tenn., Dec. 1.

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Dec. 5.

AATCC, Southeastern Sect., Atlanta, Ga., Dec. 8.

1957

January

National Cotton Council of America, annual meeting, St. Louis, Mo., Jan. 28 & 29.

February

Cotton Research Clinic, National Cotton Council of America, General Oglethorpe Hotel, Savannah, Ga., Feb. 27 to March 1.

April

American Cotton Manufacturers Institute, annual convention, Palm Beach Biltmore Hotel, Palm Beach, Fla., April 4 to 6, 1957.

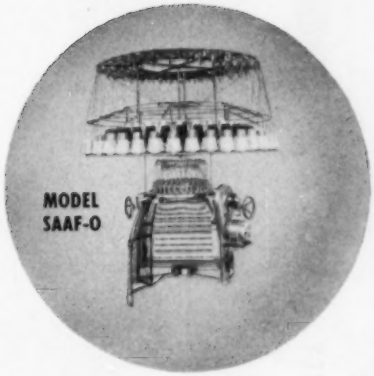
National Packaging Conference and Exposition, sponsored by American Management Association, International Amphitheatre, Chicago, Ill., April 9 to 11.

The Underwear Institute, annual meeting, Hotel Traymore, Atlantic City, N. J., April 29.

Knitting Arts Exhibition, Convention Hall, Atlantic City, N. J., April 29 to May 3.

May

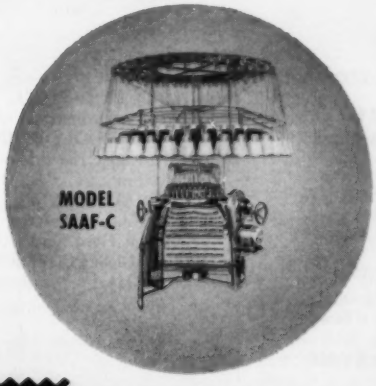
The Fiber Society, spring meeting, Clemson House, Clemson, S. C., May 1 & 2.



These features make

SUPREME

the latest word in modernized, low-cost knitting
of automatic, variable striped, patterned or solid jersey
***with* or *without* knit-on simulated rib trim**
and draw thread section separators



HIGH SPEED PRODUCTION

Large number of feeds, rugged construction and stationary yarnstand give you vari-striped and patterned fabrics at unprecedented rates. Standard 26" machine has 32 four color striping boxes — 32 three position pattern wheels—32 automatic pattern placers.

TREMENDOUS VERSATILITY

Striping boxes, pattern wheels and placers on every feed let you pour out an infinite variety of striking, multi-colored fabrics — with pattern inserts twice the size previously possible. Knit a wide variety of fabric construction and textures with virtually any type of natural or synthetic yarn.

HIGH QUALITY AT LOW COST

Knitting efficiency and quality are insured by these ingenious new features—128 cone, "step-design" (Pat. Pend.) yarnstand, new knitting elements system, new striping box with easy, manual setting, new pattern placer with slideable studs for fingertip control and new, scissor-type, synchronized "no-waste" cutters.

SUPREME
KNITTING MACHINE CO., INC.
94-02 100th STREET, OZONE PARK 16, N. Y.
Southern Representative and Showroom
The Mallack Co., 711 S. Tryon St., Charlotte, N. C

Ask For This FREE Booklet On
SUPREME'S NEW "PAY-AS-YOU-DEPRECIATE" FINANCING PLANS
The PAYD Plan

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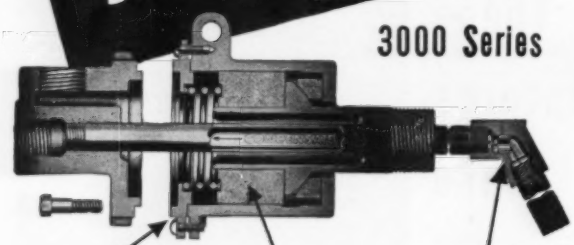
Johnson Joint with SYPHON ELBOW

3000 Series



ASSEMBLY PLATE — Holds internal parts in position when head is removed.

SELF-SUPPORTING — Needs no external supports of any kind.

SYPHON ELBOW — Permits use of straight pipe for syphon. Can be inserted or withdrawn right through the joint.

WRITE FOR FACTS

on this Series 3000 Johnson Joint and the syphon elbow. Remember Johnson Joints have written an unmatched service record . . . are first choice among mill men and machinery makers alike . . . and can fit all operating needs.

The Johnson Corporation

814 Wood St., Three Rivers, Mich.

How Metallizing saves money in textile mills

cuts machine repair costs 80%— cuts equipment "down-time"— permits reduced spare parts stocks

Practically any worn machine part—repaired for only 15 or 20% of replacement cost—in minutes and hours, instead of days or weeks.

Worn Equipment and Parts

Drive shaft journals
Roll journals and surfaces
Spindle tops and whorls
Calender rolls and journals
Top rolls, necks and centers
Slasher roll surfaces and journals
Blanket roll journals
Sand roll surfaces and journals

The list of metallizing users in the textile field reads like a Blue Book of the industry. Here are just a few:

Cannon Mills
Dan River Mills
Deering-Milliken
Greenwood Mills
Bib Mfg. Co.
Bruck Mills (Canada)

For further information write for special free bulletin "Whip Waste with Metallizing in Textile Plants."

Metallizing Engineering Co., Inc.

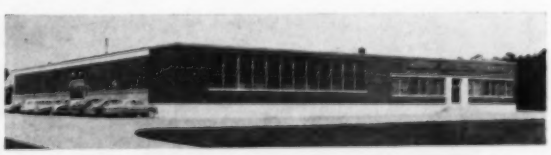
1159 Prospect Ave., Westbury, L. I., New York • cable: METCO
In Great Britain: Telephone: EDGEWOOD 4-1300
METALLIZING EQUIPMENT COMPANY, LTD.—Chobham near Woking, England

NEWS about SUPPLIERS

ACETCO CHEMICAL CO., INC., Flushing, N. Y.—Has opened a new office at 6850 Tujunga Ave., N. Hollywood, Calif. . . . ALLIED CHEMICAL & DYE CORP., SOLVAY PROCESS DIV., New York, N. Y.—Has appointed James F. Adams, Jr., general manager of technical service and Norman C. Weil technical advisor. . . . AMERICAN LAVA CORP., TITANIA DIV., Chattanooga, Tenn.—Is offering a new service to the textile industry by assisting in the selection and proper utilization of Lamicoid products. . . . AMERICAN VISCOSE CORP., Philadelphia, Pa.—Has named Thomas M. Smithwick export manager. . . . ARMSTRONG CORK CO., INDUSTRIAL DIV., Lancaster, Pa.—Has promoted Albert C. Littlejohn to assistant district manager of the Cincinnati, Ohio, office.

ARNOLD, HOFFMAN & CO., Providence, R. I.—Has named Donald J. Eccleston sales manager of the company's Northern branch with headquarters in Teterboro, N. J. Leonard G. Tubbs has been named general sales manager for the company. . . . CELANESE CORP. OF AMERICA, New York, N. Y.—Has appointed A. Carl Martin, Jr., staple-products sales manager. . . . CHEMSTRAND CORP., Decatur, Ala.—Has named Joseph W. Tucker senior sales specialist. Robert P. Nirenberg has been transferred to the technical sales service department. . . . COMER MACHINERY CO., INC., Atlanta, Ga.—Has become affiliated with Cotton Mill Machinery Co., Charlotte, N. C. . . . CRANE CO., Chicago, Ill.—Has named Harold H. Stift manager of the Chicago, Ill., office. The company has named J. W. Greene director of industrial sales and W. A. Burbine director of heating sales.

E. I. DU PONT DE NEMOURS & CO., INC., Wilmington, Del.—Has changed its textile-fiber sales setup. Salesmen who formerly specialized in only one fiber will now handle sales for all Du Pont fibers. . . . EASTMAN CHEMICAL PRODUCTS, INC., New York, N. Y.—Has formed a new chemical sales development section under the direction of William M. Gearhart. . . . FELTERS CO., Boston, Mass.—Has appointed Parker Wheeler sales manager of the Felt Products Div., Jackson, Mich. . . . FRANCOLOR, INC., Woonsocket, R. I.—Has been reopened under the direction of Jack H. Firpo to represent Compagnie Francaise des Matieres Colorantes, Paris, France. . . . GENERAL ANILINE & FILM CORP., New York, N. Y.—Has established a new planning section in the Commercial Development Dept. under the supervision of Dr. Albert Bloom. . . . HERCULES POWDER CO., Wilmington, Del.—Has named G. Fred Hogg general manager to the Naval Stores Dept.



AMERICAN MOISTENING CO., Providence, R. I., has opened this new plant in Salisbury, N. C. The one-story building contains 32,000 sq. ft. of floor space.

Chicago, Illinois . . . where Dow caustic serves alkali formulators.

DOW

wherever you're producing

DEPENDABLE CAUSTIC SODA DELIVERY IS ASSURED FROM DOW

Dow is the one producer, you know, supplying caustic soda to industry everywhere. Wherever you produce, you're *sure* of getting rapid, dependable service from Dow.

The *three* modern Dow plants and *six* additional shipping terminals . . . stretching from Bayonne, New Jersey to Los Angeles, from Chicago to Freeport, Texas . . . start the order to you immediately on your teletype, wire or call. Ocean-going tankers, inland barges, tank cars and tank trucks . . . the full facilities of the industry's most extensive and flexible distribution network go to work without delay, getting Dow caustic to you *now*.

Then, too . . . Dow customers benefit from continual process research, stringent quality control in plant and in transit, prompt field technical service. Does Dow have *your* order? THE DOW CHEMICAL COMPANY, Dept. AL 756E, Midland, Michigan.

you can depend on DOW CHEMICALS DOW

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HOBBS MFG. CO., Worcester, Mass.–Has named Howard K. Lambert district sales manager for the Cleveland, Ohio, office. . . . **INTERCHEMICAL CORP.**, New York, N. Y.–Has acquired the industrial adhesives business of Angier Products, Inc., Cambridge, Mass., and Huntington Ind. . . . **JOY MFG. Co.**, Pittsburgh, Pa.–Has appointed John P. Cartwright sales manager of industrial sales. William Hanson, Jr., has been named manager of conveyor products at the Philadelphia, Pa., plant. . . . **WALTER KIDDE & CO., INC.**, Belleville, N. J.–Has moved the Textile Machinery Div. to 35 Farrand St., Bloomfield, N. J. F. H. Muller is manager of textile sales for the division, now a unit of Kidde Mfg. Co. . . . **LUMAR CORP.**, Cleveland, Tenn.–Has been organized by William F. Luther to manufacture and offer specialized chemical products for the textile industry. . . . **MACBETH CORP.**, Newburgh, N. Y.–Has appointed Warren B. Reese vice president. . . . **NATIONAL VULCANIZED FIBRE CO.**, Wilmington, Del.–Has appointed Charles J. Williams district manager of the Rochester, N. Y., sales office. Russell S. Davis, Jr., has been named district manager in charge of the Newark, N. J., office.

WILLIAM B. WINE (left) has been appointed sales manager for all Southern divisions of the Transparent Packings Div., Lassiter Corp., Greensboro, N. C. THOMAS J. McDONALD (center) has been named New England sales representative for Emkay Chemical Co., Elizabeth, N. J. BERT W. AHRENS (right) has been named technical sales representative for the Technical Products Div., E. F. Drew & Co., Inc., New York, N. Y.

FRANK W. PERRY (left) has been named manager of the domestic starch department of Stein, Hall & Co., New York, N. Y. SAMUEL SINCLAIR (center) has been named sales manager of the Lestershire Bobbin Div., National Vulcanized Fibre Co., Wilmington, Del. GEORGE L. LEUPOLD (right) has been named to the position of assistant general sales manager of the Fulton Sylphon Div., Robertshaw-Fulton Controls Co., Knoxville, Tenn.

That Wonderful Feeling

CROMPTON RICHMOND COMPANY INCORPORATED FACTORS

The importance of available cash in a steady stream is a historical maxim. Throughout the ages a favorite quip has been, "There is nothing the matter with me that money can't cure." A modern plant, and excellent product, a dovetailed organization, and a satisfactory distribution may easily be hampered by inadequate cash – though the current assets would turn competitors green with envy. "Current assets" include the receivables which may take a month or more to liquidate – but where was that cash yesterday . . . or last week when it was most needed?

Crompton Factoring turns worrisome receivables into cash on a continuing basis . . . freeing you of any credit responsibilities and the work and cost entailed in liquidating those receivables. And the fact that Crompton's financial strength can take care of your needs at all times – that too adds to the wonderful feeling.

The Human Factor

CROMPTON-RICHMOND CO., INC.
1071 Avenue of the Americas, New York 18, N. Y.
Crompton-Richmond-Joel Hurt Co.
Glenn Building, Atlanta 1, Georgia

POLYMER SOUTHERN, INC., Greenville, S. C.–Has named Jared J. Mowry vice president. . . . **RAYBESTOS-MANHATTAN, INC.**, Passaic, N. J.–Has named H. H. Burrows senior vice president of the Rubber Sales Div. R. B. Hazard has been named vice president and sales manager of rubber and packings. . . . **STEEL HEDDLE MFG. CO.**, Philadelphia, Pa.–Has promoted G. David McGill to the newly created position of Southern product manager. . . . **U B S CHEMICAL CORP.**, Cambridge, Mass.–Is the name of the former Union Bay State Chemical Co., Inc.

USTER CORP., Charlotte, N. C.–Has appointed Heller-Rochester Corp., Rochester, N. Y., sales representatives for the Mark-Fix 3 cloth-tagging device in Illinois, Ohio, and New York. . . . **VICTOR RING TRAVELER CO.**, Providence, R. I.–Has named Walter L. Hudson Southern sales manager.

JOHN M. TERPAY (left) has been named to the sales staff of the nylon-staple division of Industrial Rayon Corp., New York, N. Y. ALBERT R. BREEN (center) has been named to represent Metlon Corp., New York, N. Y., in the Midwest. SETH M. SNYDER (right) has been named manager of the Charlotte, N. C., office of Babcock & Wilcox Co., Boiler Div.

FERNAND SCHLAEPPI (left) has been named head technician in the New England area for Ciba Co., Inc., New York, N. Y. ROBERT F. KIPP (center) has been named to head sales promotion for Oakite Products, Inc., New York, N. Y. W. C. HOWE (left) has been named director of Crompton & Knowles of Canada Ltd., Montreal, Que.

Cotton Yarn Conditioning in both Natural and Dyed Knitting Yarns . . .

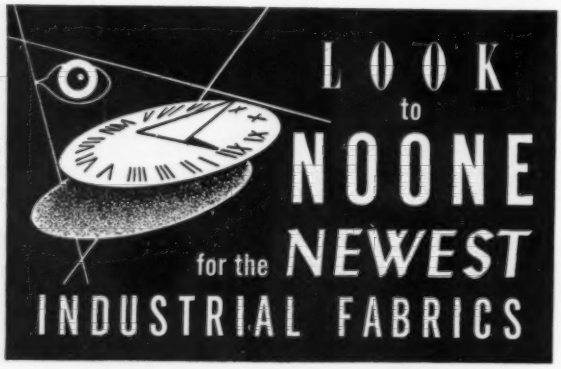
make
"More Satisfied Customers"

Because

KNITTERS APPRECIATE THE SMOOTHER RUNNING QUALITIES AND HIGHER LOFT.

Our representative will be glad to call at your convenience.

THE INDUSTRIAL DRYER CORPORATION
STAMFORD, CONNECTICUT
SALES REPRESENTATIVES IN KEY TEXTILE AREAS



✓ **SLASHER CLOTH**— well-cushioned body assures better slashing of yarn . . . greater resistance to abrasion. High tensile strength. New chemically treated cloth lasts longer . . . provides top quality warp dressing.

✓ **CLEARER CLOTH**— firm, dense nap; all wool or cotton back; highest quality—yet low in price.

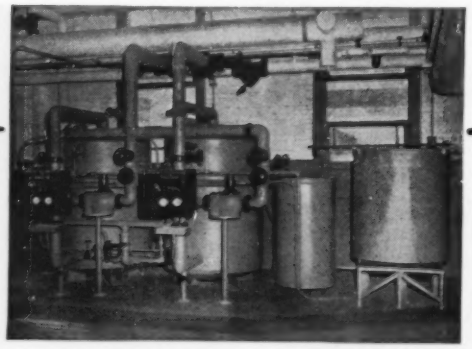
✓ **LAPPING CLOTH**— newly developed cotton warp gives greater strength, less stretch; either all wool, or part synthetic filling.

✓ **PRESSURE ROLL FELT**— long service life . . . lasting resilient cushion. All wool. Supplied from stock, cut to required width.

✓ **OTHER SPECIALTY WOVEN FABRICS**— developed at your request.

NOONE INDUSTRIAL FABRIC DIV.
F. C. HUYCK & SONS
Peterborough, New Hampshire
The oldest manufacturer of woven industrial fabrics in America

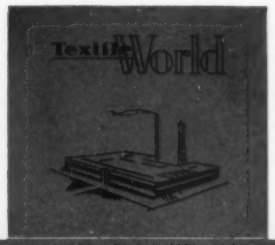
KENWOOD TEXTILE PRODUCTS



INVERSAND WATER SOFTENER PLANT
Producing
CLEAR-IRON FREE 100% SOFT WATER
Often For As Little As
1¢ per 1000 Gallons

Troubled with harshness, poor finish, uneven shades, redyes, seconds, and other product difficulties—?? The secret of uniformity may lie in your water supply. May we check it for you?

HUNGERFORD & TERRY, INC.
CLAYTON 9 NEW JERSEY



NEWS about MILLS

COTTON MILLS

American Thread Co., Willimantic, Conn., has started a modernization program at its mill. New equipment to be installed includes: 15x42 roving cans being installed on 267 cards and 27 combers; 72 deliveries of high-production drawing frames equipped with 12x42-in. roving cans; 15 Platt 10x5 MS2 speed frames equipped with Adamstop motions, Parks-Cramer traveling air cleaners, and 15x42-in. roving cans; two 180-spindle Barber-Colman Model D automatic spoolers; two 132-spindle Whitin twisters; one 500-lb. Obermaier hank-dyeing machine. The present air cleaners are being modernized with Model CTF traveling air cleaners.

Bates Mfg. Co., Lewiston, Me., is building a 30,000-sq.-ft. plant at Waterloo, Que. The building will be of steel and masonry construction. Completion is expected in November. Bates has also taken over the operation of National Chenille Products Co., Dalton, Ga.

Beaunit Mills, Inc., Rockingham and Statesville, N. C., is trading some of its weaving equipment to increase efficiency in these plants. About 100 looms and supplementary equipment is being transferred to Statesville, and about 240 looms and supplementary equipment will be brought to Rockingham.

Columbia Mills Co., Columbia, S. C., is building a 60,000-sq.-ft. addition to its building.

Cosmos Imperial Mills Ltd., Yarmouth, N. S., is building a three-story, 100-sq.-ft. addition. The building will be of steel and concrete.

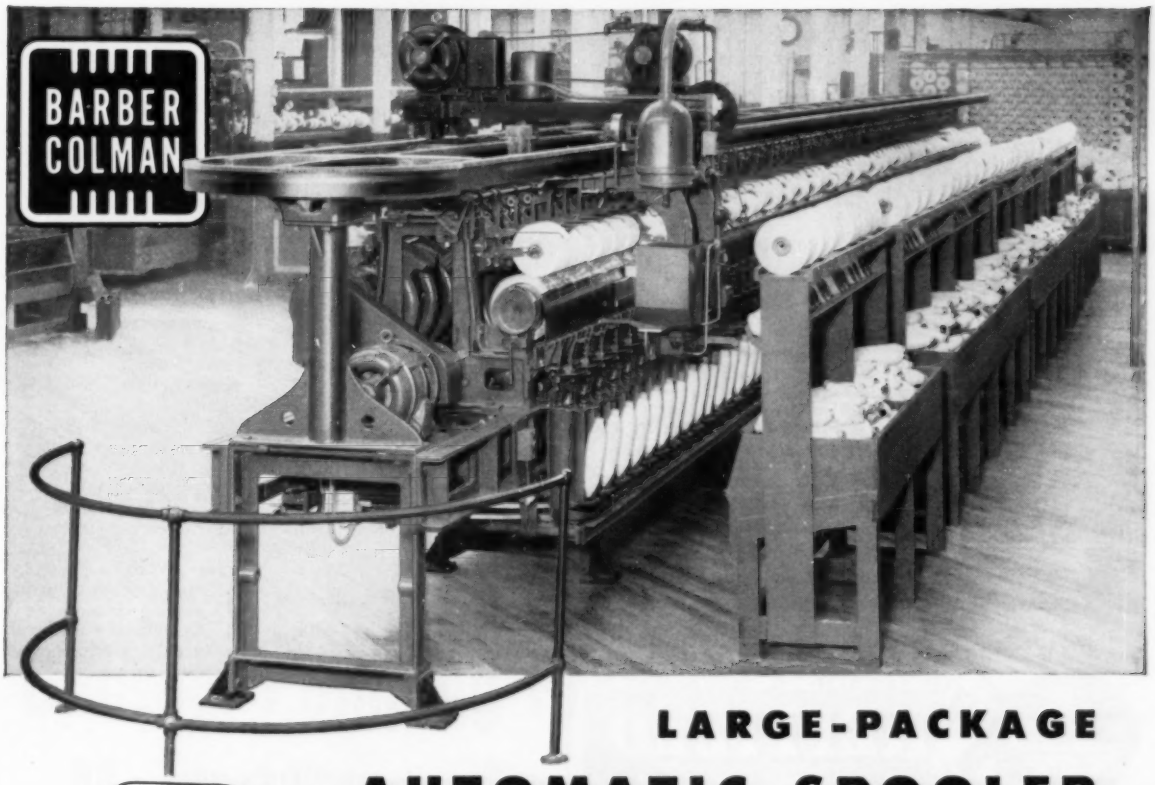
Fontana Mills, Robbinsville, N. C., a newly formed subsidiary of James Lees & Sons Co., Bridgeport, Pa., will build a new wilton and velvet carpet-weaving plant in Robbinsville. Officers of the new company are: Joseph L. Eastwick, president; Robert J. McCann, vice president; Horace C. Jones, secretary and treasurer; F. E. Malmberg, assistant secretary; Bruce W. Duddy and Curtis C. Deardorff, assistant treasurers; Norman Dawson, Jr., plant manager.

Hickory Elastic Co., Hickory, N. C., has been organized to produce rubber-covered yarn for the hosiery industry. Operations will be conducted in the former Reaco Hosiery Mill.

Ledbetter Mfg. Co., Rockingham, N. C., is installing additional machinery in the drawing, roving, carding, spinning, and automatic-spooling departments to increase over-all production 30%. The new equipment is being installed as part of a continuing modernization program, started in 1948, in which all departments except the carding department have been completely revamped.

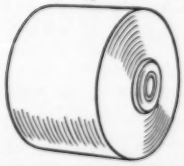
Neisler Mills, a division of Massachusetts Mohair Plush Co., Inc., Kings Mountain, N. C., is installing three 96-spindle 12x6½-in. Whitin Interdraft roving frames in its Belmont Mill No. 1, Shelby, N. C. Complete Ideal drawing change-over will also be installed.

Pacific Mills, Boston, Mass., has acquired the plants of Amerotron Corp. in Raeford, N. C., and Clarksville, Va. The plants will continue to operate as a separate division.



LARGE-PACKAGE AUTOMATIC SPOOLER

In accord with the trend toward larger packages, the new Barber-Colman Type "D" Automatic Spooler offers advantages of special design for greater production and better product. While the machine resembles the familiar Type "C" in general appearance, many details have been changed and improved. These include new methods of handling bobbins, new drive and support for the cheeses, new yarn guides and cleaning devices, new vacuum system, added safety arrangements, new means for by-passing a running thread, and various others. All the way through, this new machine is built to fit the modern methods of up-to-date mills. *Consult your Barber-Colman representative for full details.*



LARGE PACKAGES HAVE ADVANTAGES IN THE STEPS THAT FOLLOW SPINNING

The new Type "D" Barber-Colman cheese holds 6½ lbs., which is 120,000 yards of 24s yarn, or 2½ times as much as the standard Type "C" cheese. This gives more slasher beams per cheese, even in the 40"-head size, and thus more loom beams per set. *This increase in loom beams per set, and the consequent reduction in creelings per week, can provide substantial cost reductions in many mills.* Similar advantages are available in the twisting.

USE BARBER-COLMAN INSPECTION AND SERVICE

For *all* your Barber-Colman machines, be sure to call on the Service Department of your nearest Barber-Colman office. The men who staff this organization are specially trained and equipped, with a wealth of experience in checking, maintaining, repairing, and modernizing all types and models of Barber-Colman equipment. They are backed by alert main and branch offices who see that they are supplied with complete and reliable parts and information.

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

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NEW The Automated MICRONAIRE

- Speeds up checking two to three times
- Prevents operator fatigue
- Less chance for inaccurate reading
- Safe—both hands operate valves simultaneously
- Micronaires now in use can be automated
- New automated models now available

For NEW Book "Advantages and World-Wide use of the Micronaire in all segments of the Cotton and Textile Industries"

Write to Dept. 30 — THE SHEFFIELD CORPORATION
DAYTON 1, OHIO, U.S.A. 7515

GOLDEN ANNIVERSARY HEADQUARTERS

SHEFFIELD
manufacture and measurement for mankind

Speeding Up?

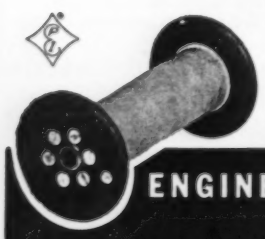
The EPI Plastic Bobbin* will Save you Money

Speeding up on any type yarn calls for the EPI Bobbin. Dynamically balanced, dimensionally stable, permanently super-smooth—and outlives several wood bobbins.

Let us prove it!

Representatives:
J. H. Windle, Jr., 231 S. Main St., Providence, R. I.
R. P. Bennett, 333 Ridge St., Honesdale, Pa.

*U. S. Patent 2,625,343



ENGINEERED Plastics
INCORPORATED
Gibsonville, North Carolina

NEWS ABOUT MILLS Continued

Pine Tree Co., Dahlonega, Ga., is building an addition that will double its size.

Thomaston Mills, Peerless Div., Thomaston, Ga., is building a three-story addition to its main building. The addition is the first step in a complete modernization program that is now under way at the mill.

WOOLEN AND WORSTED MILLS

Appleton Woolen Mills, Appleton, Wis., has installed a Crompton & Knowles 600-in. loom, a Bramwell picker-feeder, a 10-ft. stainless-steel washer, a 300-in. David Gessner napper, and a 320-in. Beloit dryer.

Cookshire Woolen Mills Ltd., Cookshire, Que., is planning to build a 5,000-sq.-ft. addition to its mill.

Hampshire Carpet Mills, Manchester, N. H., has been organized to manufacture velvet carpeting.

Kingstree Mfg. Co., Inc., Kingstree, S. C., recently purchased by Deering, Milliken, is scheduled to begin operations shortly. Additional machinery is being installed for the production of fine woolen dress goods and suiting fabrics.

Paris Wincey Mills Co. Ltd., Paris, Ont., has installed two spinning frames in its mill. An addition was recently completed for a combined office and sales room.

SYNTHETICS MILLS

Belmont Throwing Corp., Belmont, N. C., is installing new equipment as part of a $100,000 modernization program.

Burlington Mills Ribbon Corp. of Canada Ltd., Granby, Que., is building a $50,000 addition to its plant.

Duplan Corp., New York, N. Y., is transferring the operations of the Lincolnton, N. C., plant to other plants of the company. The Lincolnton plant will close when the transfer is completed.

Tait Yarn Co., Lincolnton, N. C., is installing machinery in its recently completed addition.

Warren Featherbone Co., Three Oaks, Mich., will consolidate its operations in Gainesville, Ga. The new plant will contain 55,000 sq. ft.

KNITTING MILLS

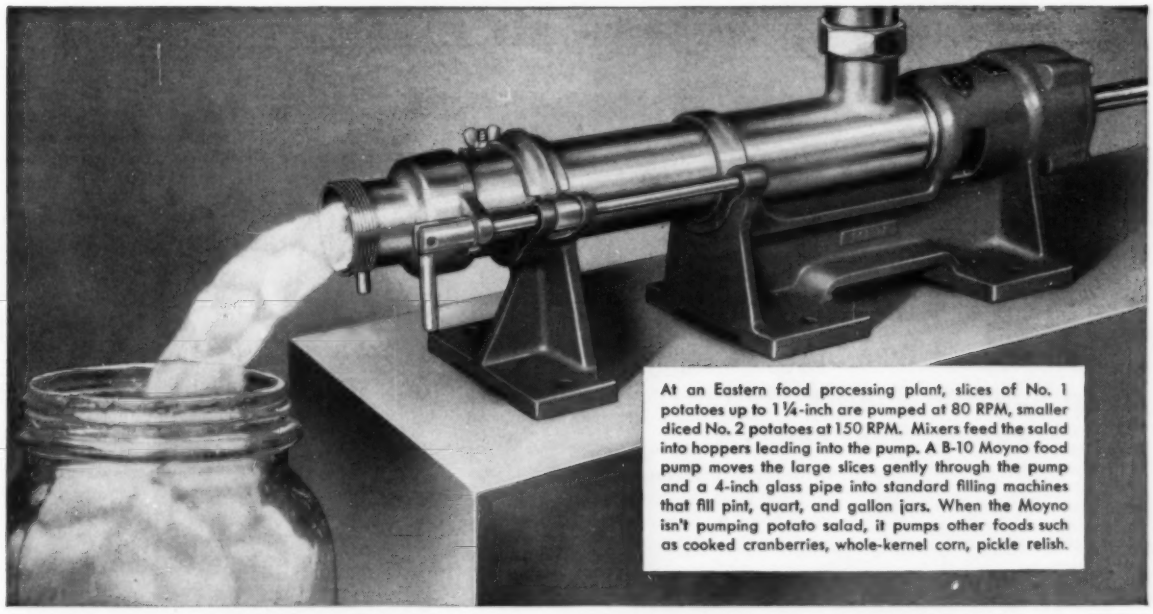
Astor Knitting Mills, Inc., Reading, Pa., has increased its capital to $225,000. The increased capital will be used to enlarge present operations.

Kayby Hosiery Mill of North Carolina, Thomasville, N. C., has consolidated its operations in Philadelphia, Pa., New York, N. Y., the state of Missouri, and High Point, N. C., and moved them to Thomasville.

Parsons & Baker Co., Phoenixville, Pa., will build an 80,000-sq.-ft. plant at Casa Grande, Ariz., for the manufacture of cotton knitted underwear. The new mill will be known as Casa Grande Mills, Inc.

Augusta Knitting Corp., Utica, N. Y., has opened a pilot plant in Lumberton, N. C., to manufacture men's and women's knitwear. The building contains 20,000 sq. ft.

Union Knitting Mills, Philadelphia, Pa., will move its operations to the former NoMend Hosiery buildings at 133 W. Berkley St.



At an Eastern food processing plant, slices of No. 1 potatoes up to 1¼-inch are pumped at 80 RPM, smaller diced No. 2 potatoes at 150 RPM. Mixers feed the salad into hoppers leading into the pump. A B-10 Moyno food pump moves the large slices gently through the pump and a 4-inch glass pipe into standard filling machines that fill pint, quart, and gallon jars. When the Moyno isn't pumping potato salad, it pumps other foods such as cooked cranberries, whole-kernel corn, pickle relish.

Unusual Pumping Problem? Maybe This Moyno® Pump Can Help You Solve It

The Moyno can pump potato salad and a lot of other materials without making mush out of them—because of the unique *progressing cavity* principle.

Moynos have no valves and pistons, no vanes or other devices that cause churning and turbulence. The Moyno has a simple screw-like rotor turning within a double-threaded stator. This design creates cavities which progress smoothly toward the discharge end of the pump, carrying the material being handled. The material is not squeezed or churned.

Pumps Practically Anything

That's why the Moyno successfully handles such hard-to-pump materials as non-pourable pastes, frits, plaster, highly volatile liquids, and materials containing large particles, such as potato salad, fruit, cherries, chow mein—even oysters! In fact, the Moyno handles practically anything that will pass through a pipe.

Wide Range of Sizes

Moynos pump many hard-to-pump materials with a minimum of abrasion and wear. Many plants have adopted Moynos simply because they last so long.

Moynos provide positive displacement. Moynos can pull up to 29 inches vacuum while discharging under pressure. Big Moynos deliver up to 500 gpm; can provide pressures up to 600 psi in the smaller frame sizes. They even get up to 1000 psi momentarily.

The Moyno is reversible—it pumps equally efficiently in either direction.

With the Moyno, accurately metered flows are obtainable by regulating operating speed.

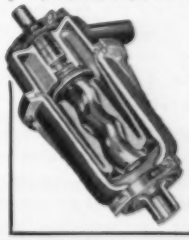
Moynos are trouble-free. They are self priming; won't cavitate or vapor-lock. There's just one moving part—no valves to stick, no pistons to gum up. Built for tough service. Easy to maintain. Moyno pumps are easy to take apart for cleaning.

Write For Bulletin

You may save a good deal of money or solve a tough problem by finding out about this simple, versatile pump. Write for Bulletin 30TW.

HOW IT WORKS

Rotor is like a stretched-out corkscrew. It turns within a stator that has a double internal thread. Thus rotor and stator form closely fitted cavities. As the rotor turns, these cavities progress evenly toward the discharge end of the pump without closing up. That's why the Moyno easily handles materials without crushing, churning, or aerating; and why it can handle so many different things—solids in suspension, pastes, abrasives, highly volatile liquids, tars, soaps, caustics—even cement and plaster.



FOR DESIGN ENGINEERS

Moynos are available in small sizes and special designs for use in automatic washers, drink dispensers, sprayers, oil burners, machine tools, gasoline pumps, and a wide variety of other equipment. If you are designing machinery, we'll work with you, in confidence, to integrate pump design with your problem.

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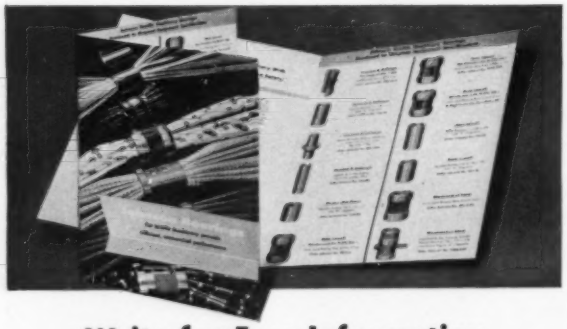


Write for Free Information on Johnson Textile Machinery Replacement Bearings

The ordering of maintenance material for textile machinery is simplified with this new Johnson folder which illustrates and describes a wide range of bearings for several leading makes of textile equipment.

You can order in confidence for Johnson Bearings are made to the exact specifications of the original equipment. The design of each bearing, its alloy, size-tolerances and oil grooving all are identical with the bearing to be replaced.

For your free copy of this Johnson Textile Bearing Folder JBL-9, write Johnson Bronze Company, 364 S. Mill Street, New Castle, Pa.

Johnson Textile Bearings

Steam-Detergent Hurriclean Gun Speeds Mill-Wide Cleaning

Weighs only 6 1/4 lbs., yet the amazing new Oakite "Hurriclean" steam-detergent gun is a match for your toughest cleaning jobs. It's safe — steam travels in insulated inner tube, cool detergent solution in outer tube. And easy to operate! A mere twist of the rubber grip changes direction of spray.

Use the "Hurriclean" gun throughout the mill — for cleaning looms, spinning machines, slasher drums, tenter chains ... for walls, floors, ceilings ... for paint-stripping. Ask your local Oakite representative about it, or write to Oakite Products, Inc., 26C Rector Street, New York 6, N. Y.

OAKITE

Export Division Cable Address: Oakite

Technical Service Representatives in Principal Cities of U. S. and Canada

NEW ABOUT MILLS — Continued

Wayne Knitting Mills, Fort Wayne, Ind., is building a plant in Kosciusko, Miss., that will be known as Kosciusko Hosiery Mills. Operations are expected to get under way by November 1. The 20,000-sq.-ft. building will cost about $125,000. About 160 persons will be employed.

DYEING AND FINISHING PLANTS

Commercial Dyers & Bleachers, Montreal, Que., has completed a one-story, 45x80-ft. addition to its plant. The cost was $22,000.

Consolidated Textiles Co., New York, N. Y., is planning to close its Martinsville, Va., mill. The Windsor Print Works subsidiary in North Adams, Mass., will also be closed.

Lyman Printing & Finishing Co., Lyman, S. C., is building a $50,000 oxidation system to purify waste water.

Fred S. Arnold has been named assistant superintendent of Dresden Mills, Dresden, Ohio.

George Asnip has been named treasurer of Abbeville Mills Corp., Abbeville, S. C.

R. W. Bates has been elected president of Bates & Innes, Carleton Place, Ont.

Robert D. Brawer has retired as assistant treasurer of the Pineview Div., Callaway Mills Co., LaGrange, Ga.

William C. Brenner has been named vice president in charge of manufacturing at Berkshire Knitting Mills, Reading, Pa.

George A. Browder has been named superintendent of Hannah Pickett Worsted Mills, Rockingham, N. C.

William Burke has been named overseer of yarn dyeing at Clinton Dye Works, Clinton, Mass.

Arthur L. Burnet has been elected a vice president of Burlington Mills, Greensboro, N. C.

D. Keith Chalmers has been appointed general manager of the No-Mend and Christian Dior divisions of Berkshire Knitting Mills, Reading, Pa.

Jack Chivington has been named superintendent of the knitting department of Wiscassett Mills Co., Albemarle, N. C.

Frederick S. Clark, Jr., has retired as vice president in charge of production at Talbot Mills, Inc., North Billerica, Mass.

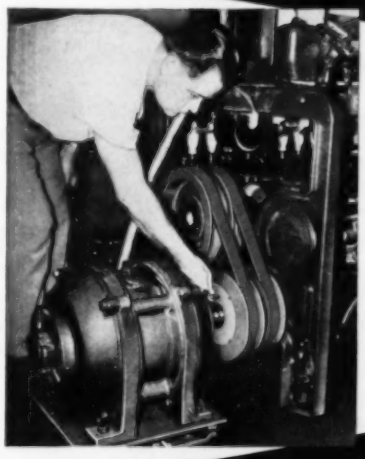
James Conner has been named superintendent of Hyde Park Mills, Covington, Tenn.

Julian B. Cumming has been named vice president in charge of manufacturing at Dominion Textile Co., Montreal, Que.

Charles N. Dailey has been named overseer of dyeing on the second shift at Glen Woolen Mills, Inc., Norwich, Conn.

Now--

Pre-set the Pitch Diameter



COMPONENTS OF
DODGE SPINNING FRAME DRIVE

- Variable Sheave with Automatic Pitch Diameter Gage
- Taper-Lock Companion Sheave
- Slide Motor Base
- Dodge Sealed-Life Belts

No more "cut and try" with the new Dodge Variable Sheave

An automatic Pitch Diameter Gage, graduated in tenths of an inch, is mounted on the outside flange of the new Dodge Variable Sheave. A spiral line on the hub intersects with the gage dial as the flanges are moved in or out. Pitch diameter is read directly on the dial.

Quickly . . . accurately . . . easily . . . you get the pitch diameter you want with a one point adjustment. The variable sheave locks as a unit when tightened on the shaft, utilizing the Taper-Lock principle.

Single or double strand drive

The Dodge Variable Sheave is available for both single or double strand drives — utilizing R-Section Sealed-Life V-Belts in the single or double strand and W-Section in the single strand only. The new, higher ratings of these belts, which contribute to the larger load carrying capacity of the Dodge Variable Speed Drive, open new opportunities for drive economy — both in initial cost and in maintenance. All components — the new sheave, companion sheaves, belts and motor base — are available from stock. Write for full details.

DODGE MANUFACTURING CORPORATION, 1400 Union St., Mishawaka, Ind.

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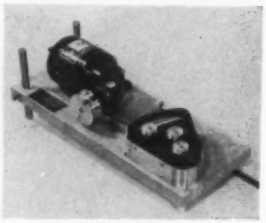
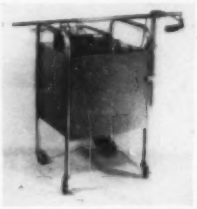
TENSIOMETERS FOR THREAD AND YARN

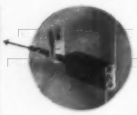


Model CS-77

THE SMT TENSIOMETER was developed by Coats & Clark Research Department. This unit was designed to measure thread tensions on sewing machines. The thread is drawn through the three pulleys of the tensiometer by means of an electrical motor. The unit is available in different ranges up to 2000 grams.



Model CS-61



THE HIGH SPEED RECORDING TENSIOMETER was developed by Celanese Corporation of America for measurement and proper regulation of yarn tension in the textile industry. In this field the appearance of finished fabric is greatly affected by the amount of tension applied in spinning, winding, warping and other processing. The sensing head shown in enlarged cut may be purchased separately and used with standard recording equipment.

Literature and prices upon request.

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NEWS ABOUT MEN Continued

E. R. Davis has been named general manager of Code Felt & Knitting Co., Perth, Ont.

Michael M. Devcich has been elected a vice president of Pacific Mills, Boston, Mass.

Frank DiFranco has resigned as overseer of finishing at Schwarzenbach Huber Co., Clifton, N. J.

Norman Elsas has resigned as an officer of Fulton Bag & Cotton Mills, Atlanta, Ga.

H. Estes has been elected a vice president of Pacific Mills, Boston, Mass.

Thomas W. Evans has been elected a vice president of Burlington Mills, Greensboro, N. C.

A. Harry Feldman has resigned as a vice president of United Merchants & Manufacturers, Inc., New York, N. Y.

L. S. Fisher, Jr., has been appointed general manager of Abbeville Mills Corp., Abbeville, S. C.

Otto Froelicher has been elected chairman of the board and secretary of Schwarzenbach Huber Co., New York, N. Y.

J. Garrou, Jr., has been named assistant superintendent of Valdese Mfg. Co., Inc., Valdese, N. C.

Jesse Gibbs has been named overseer of weaving at Vermont Textiles, Inc., N. Montpelier, Vt.

W. B. Gifford has resigned as overseer of wool grading and sorting at Southwell Wool Combing Co., North Chelmsford, Mass.

Arthur F. Golder is retiring as head of the dyeing and finishing operations of Julius Kayser & Co., Brooklyn, N. Y.

P. H. Hanes, Sr., has retired from active management of P. H. Hanes Knitting Co., Winston-Salem, N. C.

T. Hannam has been named a shift dyer at Pacific Mills, Brookneal, Va.

Robert A. Harris has been elected vice president in charge of manufacturing at Fieldcrest Mills, Inc., Spray, N. C.

George Hathaway has been named overseer of carding at Warren Fabrics Co., West Warren, Mass.

John Heffernan has been named overseer of piece dyeing at Varel Mills, Inc., Winchester, Va.

William Heller has been named director and chairman of the executive committee of Sidney Blumenthal & Co., Inc., New York, N. Y.

E. H. Hines has been elected a vice president of Pacific Mills, Boston, Mass.

Albert Johnson has been named overseer of dyeing at Stanley Woolen Co., Uxbridge, Mass.

FRANK E. MASLAND, III, (left) has been promoted to general manager of C. H. Masland & Sons, Carlisle, Pa. DANIEL L. MASLAND (right) has been named director of the Spinning Div. of C. H. Masland, Wakefield, R. I.

Like a claw, Dow chelating agents firmly grasp and hold metal ions in solution, preventing them from undergoing the usual chemical reactions. But why so many Versene products? Are they effective on all metallic ions? We hope this continued discussion provides the answers, and further clarifies what chelates will do—and won't do.

DOW

The Chemistry of Chelation: Part III

Specific agents for specific conditions · Caustic solutions Changing solutions · Industry responds

In all, Dow offers 15 commercially available chelation products. These are grouped in the Versene®, Versenol®, and iron specialty (Versene Fe-3 Specific®, Versene T®, Versene S) series. The Versene and Versenol series were discussed in Part II of this advertisement. When used in solution, the Versene products inactivate practically any polyvalent metallic ion they contact. They accomplish this by actually forming a new compound in which the metal ion becomes a member of a stable inner ring structure in the molecule, so that no reversion or breakdown can occur. However, no one chelating agent can complex all metal ions under all conditions. One of the major considerations determining which chelating agent to use is pH. To illustrate, let's look at iron-containing systems, among the most troublesome for chemical processors.

SPECIFIC AGENTS FOR SPECIFIC CONDITIONS

The first amino acid type chelate made commercially available was Versene, the tetrasodium salt of EDTA*. It is the most versatile member of the series for it ties up most polyvalent metal ions throughout the pH range—with this notable exception: It is excellent for complexing iron in the acid range only. For economy above pH 7, we must look to a later development, Versene Fe-3 Specific.

The most effective and efficient agent known for complexing iron in the mildly alkaline pH range, Versene Fe-3 Specific also chelates copper, nickel, and cobalt—but has no effect on calcium, magnesium or other common non-transition metal ions. Where calcium and magnesium along with iron cause difficulty in alkaline solutions, a blend of Versene and Versene Fe-3 Specific is the answer. This mixture, called Versene Fe-3, complexes all of these troublesome ions. Its Versene Fe-3 Specific content is sufficient so as to automatically take care of the quantity of iron normally encountered in hard water.

Versene Fe-3 is also considered an important adjunct to the polymerization of synthetic rubber. It controls the concentration of the iron ions catalyzing the reaction, thus insuring a more-uniform, higher-quality end product.

CAUSTIC SOLUTIONS

For chelating iron in caustic solution, another agent enters the picture—Versene T. This material ties up iron in a wide range of caustic solution concentrations. It also complexes calcium, magnesium, nickel, cobalt, and other metal ions—throughout the normal pH range as well as in caustic solutions. In the presence of a suitable reducing agent, Versene T functions effectively as a rust remover—and without the drawbacks of acid cleaners. Versene T thus finds widespread use in boiler and heat exchanger cleaning, textile processing, etc.

Another effective chelating agent that is selective for iron in the free caustic pH range is Versene S. Since it will not chelate alkaline earth ions, Versene S is especially suitable for use in silicate-lined textile processing kiers.

CHANGING SOLUTIONS

In special instances where a processing solution is strongly alkaline at first, then changes to neutral or to acidic, iron can be controlled with a mixture of Versene T and Versene Fe-3 Specific. In this combination, the Versene T component complexes the iron when the solution is caustic. As the pH drops, Versene Fe-3 Specific takes over.

INDUSTRY RESPONDS

Every day, Dow chelates are finding new and expanding usage —in textile manufacturing and rubber processing, in soaps, synthetic detergents, cosmetics, and pharmaceuticals. Their ability to control ionic concentrations, to eliminate product breakdown, to smooth out production and save money, has brought enthusiastic response from industry. That they are solving a multitude of processing problems is true. But chelates are no cure-all. To uncover their profitable uses, we will help in any way we can. Write us on your company letterhead for application data and technical assistance. Technical Service and Development, Department SC-913K-1, THE DOW CHEMICAL COMPANY, Midland, Michigan.

*Ethylenediaminetetraacetic acid

THE NEXT TOPIC IN THIS SERIES

PART IV *October* — Applications in specific industries (formulation of alkaline cleansers—stabilization of hydrogen peroxide and kier boiling in textile processing—uniform control of trace metal catalysts in polymerization of synthetic rubber—other industrial applications).

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Any construction to your specifications using any fiber for Men's Wear, Dress Goods, Upholstery, Draperies, Automotive, and so on. Twists, Boucles, Ratines, Knots, Nubs ——

Neva-Tarn Metallic Yarns

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NEWS ABOUT MEN Continued

J. L. Johnson has been named overseer of dyeing at Excelsior Mills, Union, S. C.

Willis E. Johnson, Jr., has been elected to the board of Mount Vernon - Woodberry Mills, Baltimore, Md.

Thomas F. Kelley has been named overseer of dyeing at A. G. Dewey Co., Quechee, Vt.

Bryant Kersey has retired as assistant vice president of the Hillcrest Div., Callaway Mills, LaGrange, Ga.

Rudolph P. Kohler has been named director of wool buying for Forstmann Woolen Co., Passaic, N. J.

P. M. Kormos has been named to head the Product Development Dept. of Aldon Rug Mills, Inc., Lenni, Pa.

John Leighton has been named superintendent of finishing at Amerotron, Inc., Barnwell, S. C.

Daniel J. Leo has been named resident manager at S. Stroock & Co., Newburgh, N. Y.

Paul Levesque has been named cost supervisor at the Hill Div., Bates Mfg. Co., Lewiston, Me.

LeRoy K. Luppold has been named superintendent of the finishing department at Berkshire Knitting Mills, Reading, Pa.

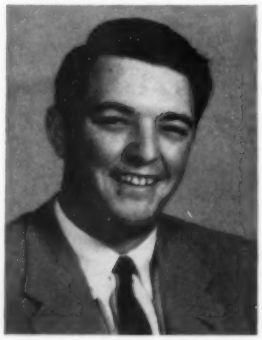
Harold Lyons has been named manager of the Brockton, Mass., plant of Shawmut, Inc.

Will S. Manning has been named manager of Kingsley Mill Corp., Thomson, Ga.

Charles C. Manuel, Jr., has been named manager of the weaving plant of Forstmann Woolen Co., Passaic, N. J.

William McDonald has been named superintendent of yarns at Belmont Yarn Mills, Woonsocket, R. I.

Kenneth C. Mills has been named special assistant to the vice president in charge of manufacturing at Dominion Textile Co., Montreal, Que.



DR. PAUL B. STAM has been named area research director at Burlington Industries, Greensboro, N. C.

John Niewaroski has been named plant supervisor at Colgate Piece Dye Works, Hawthorne, N. J.

Stanley Novataskey has been named overseer of carding at F. W. Stritch Co., Nutley, N. J.

Raymond C. Owings has been named manager of Gayley Mill, Marietta, Ga.

Robert Penny has been named superintendent of Mills Mill, Plant No. 2, Woodruff, S. C.

Frederick I. Rader has been named assistant to the vice president in charge of manufacturing at Berkshire Knitting Mills, Reading, Pa.

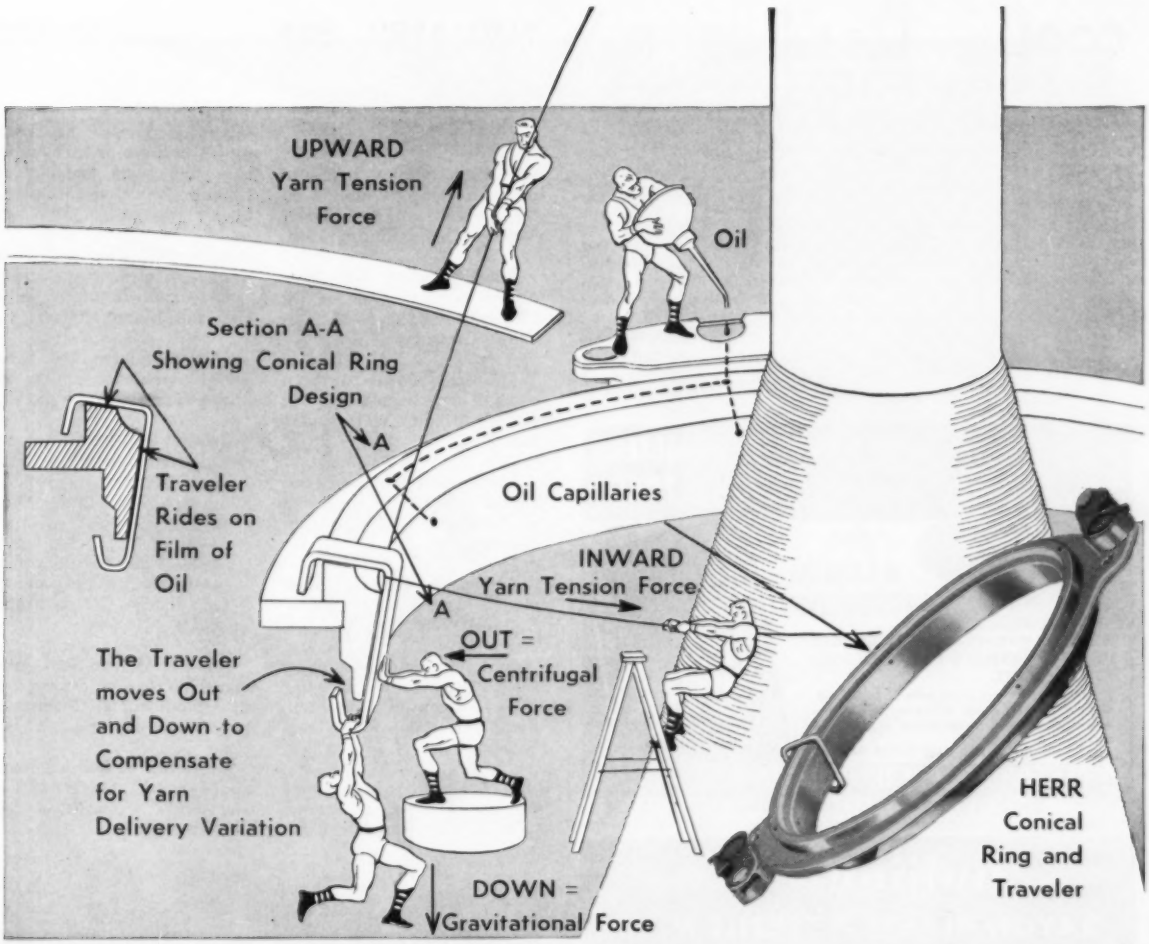
Daniel A. Randall has been named general manager of Greenwich Printing & Dyeing Co., East Greenwich, R. I.

Harvey F. Raymond has been named a vice president of Cone Mills Corp., Greensboro, N. C.

H. A. Roberts has resigned as overseer of spinning at Champlain Mill, Winooski, Vt.

Roy Rochester has been appointed superintendent of maintenance and waste at Burlington Mills Corp., Mooresville, N. C.

John Ruddle has been named overseer of twisting and winding at National Worsted Mills,



HERR Conical Ring Design forces the traveler out and down, equalizing the yarn tension!

RESULTS

- Yarn breakage is prevented
- Yarn is smoother
- Heavier More Uniform Doffs
- Minimizes Wear on Ring and Traveler

Ask for help on your problem.

The Herr Conical Ring Design equalizes the yarn tension forces (upward and inward) and the Traveler centrifugal and gravitational forces (outward and downward). These opposing forces are balanced and the traveler rides on the ring with minimum frictional contact.

Reservoirs feed oil to the capillary openings. The Traveler distributes this oil to form a microscopic film on which it rides permitting maximum spindle speed with minimum Ring and Traveler wear.

If you spin or twist confer with Herr.

Please send technical literature on Conical Rings ☐ Herr Flyers ☐

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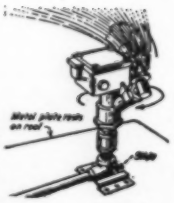

Everyone knows how the sun, beating down on the roof of a building, descends into the interior. Even with insulation, this imposes a big load on air conditioning.

Roof cooling is the answer. It can be used on any roof to keep the building cooler and save air conditioning costs. Best equipment for the job is Ruppright's Rotary Roof Cooler. Easily installed within a few hours by your maintenance department, it produces a thin film of water on the roof. This film evaporates but is continuously renewed by the slowly-rotating cooler making the roof cooler than the air.

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Jamestown, N. Y.

William Scanlon has been named overseer of dyeing on the second shift at Stanley Woolen Co., Uxbridge, Mass.

Frank Starling has been named superintendent of the Proximity Plant of Cone Mills Corp., Greensboro, N. C.

W. E. Thrailkill has been named general manager of Gerrish Milliken Mill, Pendleton, S. C.

Ferdinand K. Thun has been elected chairman of the board of Berkshire Knitting Mills, Reading, Pa.

Thomas S. Tolar has been elected president of Pacific Mills, Boston, Mass.

Kurt O. Trueb has been elected vice president in charge of production at Schwarzenbach Huber Co., New York, N. Y.

Dick Tyrell has been named overseer of dyeing at Peerless Woolen Mills, Rossville, Ga.

Armand Vanasse has been named overseer of back washing, gilling, and blending at Clinton Dye Works, Clinton, Mass.

Allan W. Vint has been elected an assistant vice president of American & Efird Mills, Inc., Mount Holly, N. C.

Chester Warren has been named overseer of carding at Champlain Mill, Winooski, Vt.

George Whelan has been named chief dyer at the new plant of Toronto Dyeing & Finishing Works Ltd., Toronto, Ont.

Carlos White has been promoted to overseer of spinning at Opp-Micolas Cotton Mills, Opp, Ala.

Howard Wilcox has been named overseer of carding on the second shift at Champlain Mill, Winooski, Vt.

J. William Wilson has been named division manager of Erwin Mills' operations at Cooleemee, N. C.

OBITUARY

Abdok K. Aziz, 73, president of Brampton Knitting Mills Ltd., Brampton, Ont.

Roy C. Baker, Jr., 48, chief engineer for P. H. Hanes Knitting Co., Winston-Salem, N. C.

Lewellyn P. Haden, 41, president of Charlottesville Woolen Mills, Inc., Charlottesville, Va.

Arzie Hinshaw, 63, overseer of weaving at Cone Mills Corp.'s Revolution Plant, Greensboro, N. C.

Albert Kluge, 64, president and owner of Artistic Weaving Co., Pompton Lakes, N. J.

Raymond Kretser, 59, consulting engineer and designer at Malden Knitting Mills, Malden, Mass.

William H. MacDonald, 69, former treasurer of United Piece Dye Works, Lodi, N. J.

Donald T. Rooney, 50, general manager of Acclaim Hosiery Mills, Inc., High Point, N. C.

Morris M. Silver, 71, founder and president of Girard Knitting Mills, Philadelphia, Pa.

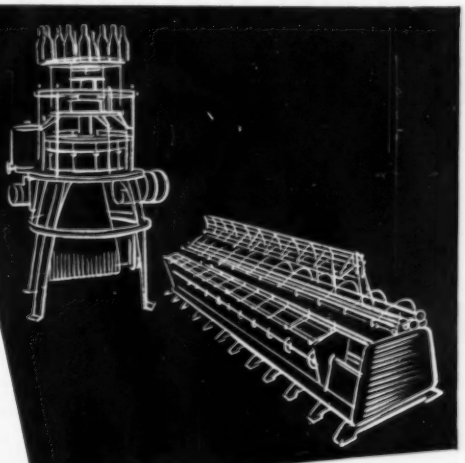
Abe Straus, 71, founder and chairman of the board of Archer Mills, Inc., Columbus, Ga.

Amidas A. Whitener, 82, president and treasurer of Rhodes-Whitener Mill, Millersville, N. C., and Russell Spinning Mill, Lincolnton, N. C.

Arthur A. Williams, 78, chairman of the board of Graton & Knight Co., Worcester, Mass.

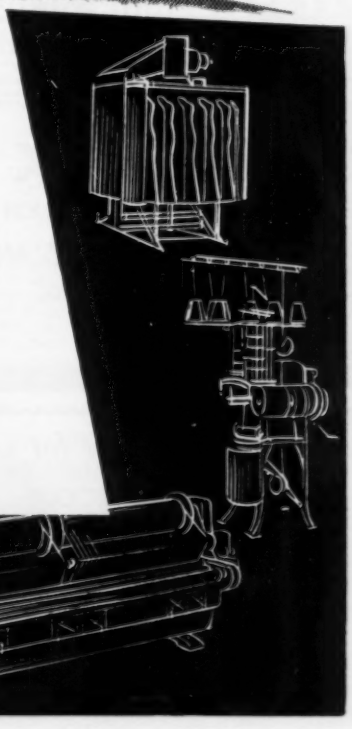
1956 interNational TEXTILE RECORDER MACHINERY EXHIBITION

KNITTING MACHINERY exhibition



The largest display
the widest range
the latest types
are all here!

OCT. 17-27 GRANBY HALLS
LEICESTER
ENGLAND



Details are obtainable from the organisers:
TEXTILE RECORDER MACHINERY & ACCESSORIES EXHIBITIONS LTD.,
Old Colony House. South King Street,
Manchester 2, England.

For more data, write this page number on Reader-Service card. →

SEARCHLIGHT SECTION

(Classified Advertising)

BUSINESS OPPORTUNITIES — EQUIPMENT - USED or RESALE

UNDISPLAYED —RATES— **DISPLAYED**

$1.50 a line, minimum 3 lines. To figure advance payment count 5 average words a line.

BOX NUMBERS count as one line additional in undisplayed ads.

DISCOUNT of 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals.

The advertising rate is $14.25 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

AN ADVERTISING INCH is measured 7/8 inch vertically on one column, 3 columns—30 inches—to a page.

EQUIPMENT WANTED or FOR SALE ADVERTISEMENTS acceptable only in Displayed Style.

Send NEW ADVERTISEMENTS to Classified Adv. Div., Textile World, P. O. Box 12, N. Y. 36, N. Y.

TEXTILE AUXILIARIES

"WE SPECIALIZE IN FINISHING MACHINERY"

Below are a few selections from our Large Stock in our Warehouse:

14—High Pressure Stainless Steel Dry Cans, 54" Face x 60" Diameter, B.B., Syphon Type.

1—50" Butterworth 5 Bowl, 100 Ton, Hydraulic Calender, Like New.

1—3 Roll, 60" Textile Embossing Calender.

1—10' Weisner Rapp, all Stainless Steel 12 compartment, Slack Washer, with 15 Ton, Pneumatic Set of Squeeze Rolls, Stainless Steel and Rubber covered.

1—Complete, latest type, Winsor & Jerauld 70' x 60" Tenter Frame, with S.S. Top opening Chain, A. & G. Steel Insulated Housing, G.E. Weff Straightener, Motor take-up, Motor and Generator.

We also have in stock 30' to 90' Tenters, Pads, Dry Cans all sizes, Spare Rubber covered Rolls, Stainless Steel Rolls and Spare Calender Rolls, Electric Motors, and everything pertaining to Bleaching, Dyeing, Printing & Finishing.

IF YOU NEED IT; WE HAVE IT.
For Further information Write or Telephone:

Office and Warehouse
146 West River Street, Providence 1, Rhode Island

Telephone: Dexter 1-9650
Dexter 1-8837

PROVIDENCE, R. I.

75 SIPP & U. S. HI SPEED RERAWS

30 ATWOOD D.D. UPTWISTERS
½ Lb. Pkg.—2 Motors

20M—10B-SPOOLS
8"T—Alum. Bbl.

150—UNIVERSAL 250B SIZING MACHINES

100—UNIVERSAL CONERS
3' 30' Taper "L" Drive-Gear Box
"A"—Oiling & Pineapple Attachment—S.S. Troughs

35M—All Aluminum TAKE-UP SHAFTS
3¼"T.x4" Hx2¼, BBL.

20—ATWOOD DOUBLERS
1—SAMPLE ATWOOD
5B Doubler—½ Lb.

BOBBINS — SPOOLS — QUILLS — All Sizes & Types

PENNSYLVANIA SPOOL & EQUIPMENT CO.

425 LEHIGH ST. ALLENTOWN, PA. Phone 3-7545

FRANK FYANS

MACHINERY CO., INC.

formerly A. F. Machinery Co., Inc.

SUITE 420 ACADEMY BLDG. • P. O. BOX 16
FALL RIVER, MASS. • TEL. 5-7432 - 5-7228

We own and offer for sale—

24 W-3 82" LOOMS, 4x1, MD.—$400 Each

72 C&K W-3 Looms 82", Motor Driven.
1 Set Gessner 68" Hyd Squeeze Rolls.
3 Riggs & Lombard Stainless Steel Piece Dye Kettles.
7 D&F 2 Cylinder Worsted Cards, 60"x54".
12 C&K 82" W-3 Looms for Duck, Plastic, etc. Motor Driven.
1 Whitin High Speed Drum Type 94" Dressing Frame with Creel & Motors, Stop Motions, etc.
2 Collins Fancy Twisters 200 Spindles each, 2¾" Ring, 4" Gauge. M.D.
Loom Mtrs., Harness Frames, Beams, Etc.

ADVANCED TEXTILE COMPANY

P. O. Box 661 Telephone STuart 1-3633 PROVIDENCE, R. I.

CAPITAL TO INVEST

This advertisement is addressed to those companies whose financial position is poor and who lack adequate capital to operate properly. If you manufacture products which have a substantial market and if you have at least $100,000.00 of invested capital in your business, we will loan you the necessary funds to place your company on a proper financial footing.

In addition our advice should enable you not only to effect savings but also to generally strengthen your competitive position.

All communications will be held in strict confidence.

Principals only need apply

L. C. BRAYSON CORPORATION

81 Boyston St. Brookline, Mass.
BEacon 2-2700

REPLIES (Box No.): Address to office nearest you c/o This publication Classified Adv. Div.
NEW YORK: P. O. Box 12 (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

PLANTS & PROPERTIES

Put Your Plant in Plant City, Florida. Be the first to manufacture or wholesale your line in fabulous central Florida. Recent steady growth plus 3,000 new residents each week creating tremendous consumer markets. Plant City, Florida is central for Miami-Jacksonville-Tampa-Orlando. Plant City has two railroads, airport, main highways, cooperative workers. Write for plant sites etc. Plant City Development Committee P. O. Box 1509, Plant City, Florida.

CONTRACT WORK

Small profitable mill in New England seeks connection with cotton and synthetic weaver doing good business, for purpose of commission weaving, with possibility of eventual merger. CW-2214, Textile World.

New England Mill can do some commission work on Pacific Converter. Lots over 5,000 pounds—18c per pound delivered in top form of suitable sliver weight. Colored tow—5c per pound extra. Owner of tow pays all freight. Apply CW-2422, Textile World.

•TEXTILE MACHINERY•

2—60" Cashiko 140 End Tape Condensers
1—60" D&F 120 End Tape Condensers
1—60" Whitin 96 End Tape Condenser
1—48" Whitin 96 End Tape Condenser
30—D&F Balling Heads

Partial listing of machinery available

Marshall Greene Textile Corp.

103 Main St. *Tel:* UN 5-4888
Milbury, Mass. PL 7-2869

FOR SALE
DYESTUFFS & CHEMICALS
Acetate's, Cottons, Rayon, Chrome, Nylon, Dacron & Sulphur's.
Arkansas Penetrolin, Worsted Oil
And other Chemicals.
LIBERAL DISCOUNTS
SUPERIOR TEXTILE MACHINERY CORP.
223 West 28th St., N. Y. Lx. 4-8544

WHITIN TRICOT MACHINES

Model B-2, 28 Gauge, 1946 and 1947 series. Extra bearings, end plates, link belt PIV drives. Excellent condition.

FS-2254, Textile World
Class Adv. Div. P.O. Box 12, N. Y. 36, N. Y.

CRESCENT OFFERS LATE-TYPE MACHINERY

FROM FOUR OF NEW ENGLAND'S FINEST-EQUIPPED

★ COTTON, BLEND and WORSTED MILLS ★

- **AMOSKEAG-LAWRENCE MILLS, INC.**
- **AMORY WORSTED MILLS, INC.** *Of Manchester, N. H.*
- **AMOSKEAG MILLS, INC.** *Both of Manchester, N. H.*
- **SUNCOOK MFG. CO., INC.** *Of Suncook, N. H.*

★HIGHLIGHTS OF EXCELLENT MACHINERY AVAILABLE★

2—Saco-Lowell No. 12 Cleaners with No. 11 Condensers, M.D.
4—Saco-Lowell Single Process Pickers, 2-Beater, (2 with Blending Reserves), M.D.
2—Lummus Steel Blending Feeders with Beater Sections, M.D.
1—Saco-Lowell Lap Meter.
18—Whitin 40-inch Cotton Cards, with Abington Strippers.
22—Pettee 40-inch Cotton Cards, with Abington Strippers.
14—Woonsocket 40-inch Cotton Cards, with Abington Strippers.
27—Howard & Bullough 40-inch Cotton Cards, with Abington Strippers.
42—Saco-Pettee 40-inch Roller Top Cards with Fancies, with Abington Strippers.
16—Deliveries Whitin Bi-Coil Drawing Frames.
80—Deliveries Saco-Lowell Drawing Frames.
24—Deliveries Saco-Pettee Drawing Frames.
4—Saco-Lowell 10x5 Roving Frames, 92 spindles each, with Whitin Inter-draft, M.D.
8—Whitin Super-draft 8x4 Roving Frames, 138 spindles each, M.D.
4—Saco-Lowell F-3 10x5 Roving Frames, 126 spindles each, with Pneumastop, M.D.
4—Saco-Lowell FS-2 10x5 Roving Frames, 126 spindles each, with Pneumastop, M.D.
50—Fales & Jenks Spinning Frames, 288 spindles each, Whitin Casablanca, 3-inch gauge, 1¾-inch ring, M.D.
10—Whitin Spinning Frames, 264 spindles each, Whitin Casablanca, 3¼-inch gauge, 2-inch ring, M.D.
20—Whitin Spinning Frames, 240 spindles each, Whitin Casablanca, 3¼-inch gauge, 2-inch ring, M.D.
6—Fales & Jenks Spinning Frames, 252 spindles each, Whitin Casblanca, 3¼-inch gauge, 2-inch ring, M.D.
8—Whitin Spinning Frames, 252 spindles each, Whitin Casablanca, 3½-inch gauge, 2-inch ring, M.D.
1—Armstrong Cot Buffing Machine and Assembling Machine with Roll Attachment.
6—Colins Novelty Twisters, 200 spindles each, 4½-inch gauge, 3¼-inch ring, M. D.
20—Collins Trap Twisters, 200 spindles each, 4½-inch gauge, 3¼-inch ring, M.D.
6—Whitin Model BJ Twisters, 4½-inch gauge, 3-inch ring, 200 spindles each, M.D.
8—Saco-Lowell Twisters, 3½-inch gauge, 2½-inch ring, 200 spindles each, M.D.
6—Saco-Lowell Novelty Twisters, 6-inch gauge, 4½-inch ring, 176 spindles each, M.D.
4—Whitin Model F Twisters, 6-inch gauge, 4½-inch ring, 176 spindles each, M.D.
2—Whitin Novelty Twisters, 6-inch gauge, 4-inch ring, 1-116 spindles, 1-176 spindles, M.D.
3—Foster Doublers, Model 57, 100 spindles each, wooden tubes, M.D.
11—Universal Roto-Coners, paper cones; 9 with cast iron traverse, 2 with Bakelite, M.D.
3—Foster Model 102 Winders, 100 spindles each, 2 for stainless steel 1⅝-inch tubes, 1 for paper cones, M.D.
1—National Loop Dryer, 108-inch Poles, aluminum housing, 1954.

Complete Obermaier Package Dyeing Unit with 2—600 lb. kettles and 1—100 lb. kettle, with Extractors and Dryers.
2—12-foot Dye Becks, Motor Driven.
2—8-foot Dye Becks, Motor Driven.
1—4-foot Dye Beck, Motor Driven.
1—2-foot Sample Dye Beck, Motor Driven.
2—Rodney Hunt Fulling Machines.
2—Riggs & Lombard Dolly Washers.
2—Parks & Woolson Semi Decating Machines.
2—Scribner 750 lb. Rawstock Pressure Kettles.
2—Morton 750 lb. Rawstock Pressure Kettles.
1—Morton 1,000 lb. Rawstock Pressure Kettle.
1—Sargent Pit Feeder with Squeeze Rolls.
1—Sargent 92-inch Rawstock Dryer, stainless steel apron.
2—Sargent Feeders.
1—Sargent Wool Scouring Train, 60 inches wide, 5-bowl, pneumatic loading.
1—Sargent 10-section Rawstock Dryer, 92-inch, stainless steel apron.
1—Sharples Complete Grease Recovery Unit.
32—S.A.C.M. Worsted Cards, 2-cylinder, 60x50-inch, with feeders, automatic lubrication.
Bradford Combing Unit with 14 T. W. Smith Noble Combs.
Complete French Combing Unit with 50 late model S.A.C.M. Combs and 6 Holdsworth High Speed Gill Reducers.

AMERICAN SPINNING UNIT

1—Warner & Swasey Pacific Converter with heat stretch unit, M.D.
10—Warner & Swasey Pin Drafters, Dual, M.D.
6—Warner & Swasey Pin Drafters, Quad, M.D.
4—Saco-Pettee FS-4 10x5 Roving Frames, 120 spindles each, with Pneumastop, M.D.
2—Saco-Lowell FS-4 10x5 Roving Frames, 120 spindles each, M.D., 1951.
2—Saco-Lowell F-5 10x5 Roving Frames, 120 spindles each, M.D.
2—Saco-Lowell F-5 10x5 Roving Frames, 120 spindles each, with F-5 draft, M.D.
2—Saco-Lowell F-5 10x5 Roving Frames, 84 spindles each, with F-5 draft.
12—Saco-Lowell Spinning Frames, 276 spindles each, with SZWW draft, 3¾-inch gauge, 2½" inch ring, M.D.
6—Whitin Spinning Frames, 224 spindles each, with Saco-Lowell ZW draft, 3½-inch gauge, 2¼-inch ring, M.D.
4—Whitin Spinning Frames, 200 spindles each, with Saco-Lowell ZW draft, 3½-inch gauge, 2¼-inch ring, M.D.
8—Whitin Model F-2 Spinning Frames, 252 spindles each, Casablancañ 4-inch gauge, 2½-inch ring, M.D.
14—Whitin Spinning Frames, 204 spindles each, with Saco-Lowell ZW draft, 4-inch gauge, 2½-inch ring, M.D.
8—Abbott Winders, 100 spindles each, 3° 30' paper cones, M.D.
4—H-W Yarn Conditioners.
1—James Hunter 5-cylinder Wool Garnett, reconditioned, M.D.
2—Whitin Staple Cutters.

WEAVING DIVISION

4—Reiner Warpers, 54¼-inch, with magazine creels, M.D.
2—Cocker 11-Can Stainless Steel Slashers, 90-inch headways, with Westinghouse drives.
1—Uxbridge "Gentle Air" Slasher with Westinghouse drive.
1—Morton Gaulin Homogenizer.
2—Abbott Quillers, 100 spindles each, M.D.
2—Abbott Quillers, 40 spindles each, M.D.
3—Abbott Quillers, 80 spindles each, M.D.
33—Spindles Whitin Schweiter Quillers, automatic loading, M.D.
24—Spindles Whitin Schweiter Quillers, M.D.
78—C & K 82-inch W-3 Looms, 4x1, convertible (with convertible parts).
72—C & K 82-inch W3A Looms, 4x1, convertible (with convertible parts for 11).
24—C & K 82-inch W-3 Looms, 4x1, M. D.
48—C & K 82-inch W3AC Looms, 2x2, M.D.
66—C & K 76-inch W-3 Looms, 4x1, M.D.
60—Draper 44-inch XK Looms, 20-harness dobbies, M.D.
7—Warner & Swasey 95-inch Weaving Machines, M.D.

SUNCOOK DIVISION

9—Warner & Swasey Dual Pin Drafters, M.D.
6—Warner & Swasey Quad Pin Drafters, M.D.
14—Saco-Lowell F-5 Roving Frames, 84 spindles each, M.D.
32—McGlynn Hayes Spinning Frames, 400 spindles each, 3-inch gauge, 2¼-inch ring, M.D.
1—H-W Yarn Conditioner.
2—Foster Model 102 Winders, 100 spindles each, 1 for paper cones, 1 for wood cones, M.D.
1—Abbott Cone Winder, 104 spindles, 9° 15' paper cones, M.D.
30—Collins Twisters, 200 spindles each, 4¼-inch gauge, 3-inch ring, M.D.

ALSO AVAILABLE

Miscellaneous Equipment for Wool Blending. Machine Shop and Carpenter Shop Equipment. Complete well-equipped Laboratory. Office Equipment. Mill Supplies. Toledo Dial Scales, Toledo Lap Scales. Electric Lift Trucks, Electric Hoists, Whip Hoists, Bale Presses, Sewing Machines, Inspecting Machines, Perchers, etc.

REPRESENTATIVES AT PLANT DAILY ★ CONTACT CRESCENT CORP. AT MANCHESTER, N. H. BOX 275 — OR TELEPHONE NATIONAL 5-9741 — 5-9742

TEXTILE MACHINERY—MACHINE TOOLS—ELECTRICAL EQUIPMENT

CRESCENT CORPORATION

SALES
PURCHASES
LIQUIDATIONS
APPRAISALS

CRESCENT EXPERIENCE SPECIALIZED SERVICE LEADERSHIP

397 BAY ST., FALL RIVER, MASS. — PHONE OSBORNE 7-9421

EXPORT OFFICE: 1450 BROADWAY, NEW YORK, N. Y.—PHONE LACKAWANNA 4-0700
SOUTHERN OFFICE AND WAREHOUSE: SPARTANBURG, S. C.—PHONE 2-5624

New & Unused HEAVY DUTY INDUSTRIAL MODEL

AXIAL FLOW FANS

Manufactured by the DELCO DIVISION of GENERAL MOTORS

offered at 50% of General Motors Delco Price!

For the Control of

- FUMES • STEAM • ODORS • DUST • VENTILATION
- COOLING OF WORK IN PROCESS • CROP DRYING
- INDUSTRIAL VENTING • PERSONNEL COOLING
- FORCED COOLING OF ELECTRICAL EQUIPMENT

Standard model, mounted in framing unit, ready to install in sash, building opening or duct system. Frame designed for ready attachment of louvre, duct or hood.

16,500 C.F.M. @ ½" STATIC PRESSURE
(18,500 C.F.M. FREE DELIVERY)

• STEEL & NON FERROUS METAL WORKING PLANTS • CHEMICAL PLANTS
• FOUNDRIES • POWER PLANTS • CROP DRYING • MACHINE SHOPS • MILLS—MINES
• FABRICATING & WELDING SHOPS • FOOD PROCESSORS • ELECTROPLATERS

ORIGINAL SELLING PRICE $545 each
OUR PRICE 1-5 $275 EACH
6 OR MORE $250 EACH F.O.B. Reading, Pa.
Unframed model—deduct $10.00
MAY WE SHIP YOU A SAMPLE ORDER ?

HEAVY DUTY INDUSTRIAL MODEL
ENCLOSED WEATHER-PROOF MOTOR
CAST ALUMINUM ALLOY
CONSTRUCTION THROUGHOUT

Model 1-1791Y framed Unit—4 H.P.—220 Volt—60 Cycle Single Phase—1200 RPM

#1—4450Y Unframed Unit—4 H.P.—220 Volt—60 Cycle Single Phase—1200 RPM

Framed Fan—Mounting Frame Outside Dimensions: 45⅛" x 45⅛" x 11-9/16"—Wt. 484 lbs.

Unframed Fan 39" diameter bolt circle—40¼" over-all diameter—11¾" over-all width—Wt. 400 lbs.

Suitable for either Horizontal or Vertical Mounting. May be used either as blower or exhauster.

Installation information, complete maintenance, operation and instruction manual with each fan.

INDUSTRIAL EQUIPMENT DIVISION OF
LURIA BROTHERS & COMPANY, INC.
PHILADELPHIA NATIONAL BANK BLDG.—PHILADELPHIA 7, PA. • Rittenhouse 6-7455

IN STOCK

MARCO FLOW MASTER CONTINUOUS process with Homogenizer, Kombinator, Reactor, mixer, all stainless steel.

STAINLESS STEEL storage and mixing tanks, from 30 gal. to 10,500 gal.

Centrifuges and Centrifugals—Bird, De Laval, Sharples, Fletcher, Tolhurst, AT&M, etc.

PERRY EQUIPMENT CORP.
1430 N. Sixth St. Philadelphia 22, Pa.
ST 4-7210

FOR SALE—REASONABLY PRICED

50—12 carrier N.E. Butt Braiders.
100—16-20-24 & 32 Carr. N.E.B. Braiders.
18—33 carrier N.E. Butt Braiders.
12—33 & 41 Carrier Fidelity Braiders.
15—3 carrier Braiders, 3½ x 6" spools.
2—3 carrier Braiders, 4½ x 6½" Spools.
15—9 carrier N.E.B. Soutache Braiders.
15—13 & 17 Carr. 3 & 4 Hd. Tex. Brders.
2M—Bottom Latch Carriers, #1 & #2.
10M—Bottom Latch Carrier Wts. Ass't.
100—10" x 36" Fibre Braid Cans.
40—N.E.B. 3 roll Braider Takeup Sets.
25—N.E.B. Double Deck Servers or Twisters.
3—Hask-Dawes 2 & 12 Spindle Twisters.

—Send List of Your Surplus Equipment—

MICHAEL SOLOMON CO.
131 Spring Street New York 12, N. Y.

FOR SALE
USED & REBUILT
ECONOMY BALING PRESSES
Electric & Hand
All Sizes in Stock

FERTIK & COMPANY
9th & Tioga Sts., Phila. 40, Pa.

WANTED

DYESTUFFS
Will buy your surplus and obsolete dyes and chemicals for cash.

NEW ENGLAND PRODUCTS CO.
91 Oliver St. Boston, Mass.
Established 1919

WANTED
Smith-Drum stainless steel
Package Dyeing Machine
200 lb. size.
W-2132, Textile World
Class Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

WANTED
GOOD USED STEEL ELEVATED WATER TANKS — SELL US YOUR ELEVATED TANK, IF NO LONGER NEEDED.
WE BUY — SELL — MOVE — ERECT NEW — USED STEEL ELEVATED WATER TANKS AND PROVIDE PAINT OR REPAIR MAINTENANCE FOR THESE STRUCTURES.
UNIVERSAL CONSTRUCTION COMPANY
1129 Udell St. INDIANAPOLIS 23, INDIANA

WANTED
Rectangular stainless steel tanks type 304 or 316 depth 30 to 42 inches capacity from 40 to 125 gallons each.

Monte Christi Corporation
Rahway, N. J.

FOR SALE

COMPLETE MODERN UNIT FOR RAW STOCK TREATMENT AND BATT MANUFACTURING. EXCELLENT CONDITION.

1—James Hunter NEEDLE LOOM, 127½" width, with unrolling stand, lattice feed apron, draft rolls, single needle board 10½" wide, rotary slitter, rollup stand, 20 Hp. motor, Reeves #4 V.S. Drive, Clutch, V-belt drives.

4—James Hunter 2 Cylinder GARNETTS 20" dia. x 60" face, double 16" doffers, ball bearing, roller chain drives, clothed 12 to 18 threads per inch, extended Hopper Feeds, waste savers, stationary lappers 63" wide, delivering to single floor apron 90" wide x 45' long with compression rolls, 4 blade rotary slitter, 98" shear with cut control device and rollup. Garnetts driven by 7½ Hp. totally enclosed motors, V-belt drives.

2—Complete Raw Stock Treatment TRAINS, each consisting of one Dewsberry 36", 12 bar picker, B.B. Cylinder 24" dia., feed table and 10 Hp. V-belt drive; 1 Hunter 48" extended Hopper Feed, 80" bottom lattice apron, 2 Hp. V-belt drive; 1 Hunter 48" Scouring Bowl 24' long, S.S. rake pins w/Hunter 48" Squeeze Set, rubber top roll 13" dia., cast iron bottom roll 14" dia. Liquid returned to bowl by Pump. American Speed Reducer motor drive; 1 Hunter 8 Section Stock Dryer, each section having 2 blowers, motor driven and a finned heating unit. Agitating section in center. Automatic heat control on last four sections. V.S. drive on apron.

All motor specifications 220-440/3/60.

McDOWELL ASSOCIATES INC.

General Offices 41-E. 42 Street
New York City 17, N. Y.
Phone: Murray Hill 2-7417

Warehouse No. 1 N. Front
Dock & Water Sts., Hudson, N. Y.
Phone: Hudson 8-3211

WOOLEN FOR SALE WORSTED

WE OWN AND OFFER FOR IMMEDIATE SALE AND DELIVERY.

PICKING

1—D&F 48" x 12-Bar Mixing Picker. Roll Brg.

1—D&F 10' All Metal Cone Duster w/Fan.

3—Harwood Picker Feeds 48" & 54".

1—Clark Am. Std. Rag Picker NEW.

CARDING—WOOLEN

2—D&F 3-cyl. 60x60. Peraltas. Broadbands. Dble Rub 96-end Tapes.

6—D&F 3-cyl. 60x60. Peraltas. Broadbands. Sgl Rub Tapes 96 or 120-ends.

2—Duesberg-Bosson 60" Peraltas.

6—Duesberg-Bosson 72" Peraltas.

1—D&F 60 x 20" Garnet Breast.

5—D&F 60" x 120 & 140-end Sgl Rub Tape Condensers.

5—Sturtevant #00 Waste End Blowers ½-HP 550V.

DRESSING

1—Whitin High Speed Dressing Unit. Mdl K x 110" Drum Reel. Beamer. Comp. Mag Creel.

1—Sjostrom Vari-speed Drive for Dressing Reel 2-HP 220/440V.

WEAVING

160—C&K 76" Mdl W-3 Auto 4x1 Box WOOLEN LOOMS. 9½" Bobbin. 18 x 2-⅛ x 1-11/16" Shuttle. Yr 1936-44.

200M—9½" x 3-Ring Loom Bobbins.

WOOL SPG. UNIT AS A PACKAGE

1—D&F 3-cyl. 60 x 60 Woolen Card. Peralta. Dble Rub Tape.

2—D&F 120-spdl x 6½ x 5" Ring Mdl E Wool Spg. Frames. Yr 1948.

FINISHING

1—Cook Detwister S.S. M.D.

1—Hunter 42-72" x 10-Pass UNIFLOW CLOTH DRYER. 1944 Model.

1—Hunter 42-72" x 10-Pass Return type Pin Tenter CLOTH DRYER. 1940 Mdl.

2—Gessner 72" Mdl PD ROTARY CLOTH PRESSES 20" cyl. Reeves #5 w/25-HP motor.

1—Spare Gessner 72 x 20 cyl. Redraw filed.

1—Set 2 spare 84" x 18" Rubber Squeeze Rolls only.

DYEING

2—Morton 50# S.S. Pressure Raw Stock Dye Kettles.

1—R&L 6' S.S. Pce. Dye Kettle.

4—Lightening Elec. Mixers ¼-½-HP.

SLASHER

1—S-L 84" Hot Air Slasher. Complete Unit. Yr 1949.

1—S-L 84" Hot Air Slasher Dryer w/ Headway. Yr 1948.

1—R&L 48 x 48 S.S. Size Kettle.

WORSTED

20—Warner & Swasey Pin Drafters—Duals, Quads & Ballers.

1—Holdsworth Sgl. Hd. Gill Reducers. Baller Del. 1952.

6—D&F 2-cyl. 60x54" dia. Worsted Cards.

33—Schlumberger French Combs. Yr 1947-8.

2—SACM 32-spdl. Cone Gill Reducers 12x6. Mtr Dr. Yr 1953.

24—Whitin FW-3 Spg. Frames 200 x 4½" ga x 3" Herr Ring. Bijur Oilers. 15-HP Mtrs. 1944-7.

1—Foster Mdl 57 Doubler 100 x 7" Tr. Mtr Dr.

FRANK G. W. McKITTRICK CO.

78 FLETCHER STREET LOWELL, MASS.

Telephone GLenview 8-6391

FOR SALE

Mayoux skein dyeing machine, 44 porcelain reels, divided 4-4-6-8 on each side, monel individual tubs on one side, tubs lacking on other side; motor (220/3/60) and driving mechanism complete except for reverse (I can furnish electric reverse and hydraulic system)

Abut 200 porcelain reels for Buhlmann, Mayoux, and similar dyeing machines, standard length and flange diameter, 3" diameter holes (rubber adapters can be furnished to reduce size of holes.)

Location: New Jersey. Condition very good.

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TEXTILE MACHINERY

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Phones: AR 4-7486 SH 2-4958

LIQUIDATION SALE

3—V.V. 60" S.S. Tensionless Jiggs

4—72" Werner S.S. Jiggs

2—50" S.S. Totally Enclosed Jiggs

1—L-6 Nash Pump, Motor, Strainer & Tank

4—Maxon Burners

1—60' x 60" Tenter Frame, S.S. Clips

1—64" Progressive Examining Machine with reverse

1—3-roll 68" Hydraulic Calender

1—8' S.S. Dye Beck

1—14' S.S. Dye Reel, Pony Reel & Rake Beam

1—Butterworth 5-roll Calendar, 120", 2 steel rolls, 3 composition rolls, Mycock Expander, Overhead Swing Folder

1—Vanango 150 lb. S.S. Paddle Dye Machine, totally enclosed

1—50" Werner S.S. Jigg

1—100", 2 rubber roll Hydraulic Padder

A & M BLANK CO., INC.

301-313 East 22nd St. (at 7th Ave.) Paterson, N.J.

SHerwood 2-1367-8

FOR SALE — MODERN TEXTILE MACHINERY

The former PRENDERGAST MILL

Bridgeton, R. I.

8—C&K W3 All Purpose Looms, 82", 25 harness dobby, motor.
36—C&K W3 Looms, 82", 25 harness dobby, motor.
1—Parks & Woolson Semi-Decater, 72", L4 Pump.
1—Yorkshire 2 Bowl Crab, 72" wide.
1—Ingersoll-Rand Air Compressor, Type ER1, 9x6, 10 H.P.
1—South Bend Lathe, 36" bed, 10" swing, ½ HP.
24—Spdls. Hacoba Automatic Filling Winders—1954.
12—Spdls. Britoba Filling Winders—1951.
1—Rodney Hunt S.S. Washer & Dye Kettle, 6'.
1—Gessner 72" Scutcher & Vacuum Extractor.

The former AMES TEXTILE CORP.

Southbridge, Mass.

70—C&K W2 Looms, 82", 20 harness dobby, motor.
1—Bachman-Uxbridge Gentle Air Slasher, 80", West Pt. Boxes—1950.
8—Saco-Lowell Tape Drive Twisters, 200 spdls ea., 3" ri, 4" & 5" ga.
2—Riggs & Lombard S.S. Encl. Dye Boxes, 6' wide.
1—Birch open width Washer, 82" wide, 4 sq.—1948.
1—David Gessner Hi-Speed Press, 66" wide, complete—1948.
2—Parks & Woolson Centurial Shears, 66", 3 blades, motor driven.

Other Machinery For Sale

40—Del. Saco-Lowell Controlled Draft Drawing, 3 del.—1949.
2—Saco-Lowell Lap Winders, Model #37—1949.
1—Barber-Colman Hi-Speed Quiller, 30 spdls.—1949.
48—C&K C6 Looms, 25 harness, 4x1, box—1946, 60".
11—Warner Stainless Steel Dye Jiggs, 70" wide—1953.
1—Winsor & Jerauld Tenter Frame, 90' long x 62" wide, w/Batcher.
17—Lowell 40" Cards, 27" doffers, 12" coilers.
16—Atwood Uptwisters, Model #110, 208 spdls. 2 lb. Headless Pkg.
1—Johnson 7 Drum Slasher, 62" headway—1949.
2—Hinnekens Stainless Steel Dye Boxes, 12'.
1—Greenville Stainless Steel Slack Rope Washer—1948.
3—S-L Large Ring Twisters, 6" ga, 10" traverse, 4½" ring, 176 spdls.—1938.
4—S-L Large Ring Twisters, 5" ga, 10" traverse, 3-½" ring, 148 spdls.—1935.
2—Foster Doublers, Model 57, 100 spdls, age—1951.
3—Foster Model #102 Paper Cone Winders, 100 spdls.—1944.
2—Cocker Ball Warpers with Creels, 700 ends.
1—Stainless Steel Pneumatic Wringer—1948.
1—Economy Bale Press 61 x 32 x 65.
1—Reilly RO Boiler.—1949, 60,000 lb. SPH.
1—Cochran Deareating Heater, 150,000 lb. SPH, 1944.
2—G.E. Steam Turbo Generators, 1000KW 1—condensing; 1—non-condensing, 2300 volts.

Advise us of your machinery requirements, send complete specifications, and we will be pleased to submit our offerings to you. "Single Machine to Complete Mill."

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For the Finest in Rebuilts

1902 AMERICAN 1956

93 CFM 100 psi 7x6 Ingersoll-Chicago-Worthington
137 CFM 100 psi 7x7 Ingersoll ES1
160 CFM 60 psi 8x7 Ingersoll ES1
173 CFM 100 psi 8x8 American-Ingersoll-Chicago
229 CFM (actual) 100 psi C-50-50H Fuller
234 CFM 100 psi 9x9 Chicago T
234 CFM 100 psi 9x9x9 Chicago (St.) New
254 CFM 115 psi 10x10 Ingersoll ER1
283 CFM 35 psi 10x7 Ingersoll ES1
290 CFM 75 psi 10x9 Ingersoll ES1
343 CFM 500 psi 11-5x13 Worthington HB2
354 CFM Vacuum 14x5 Ingersoll
360 CFM Vacuum 14x8 Oliver
364 CFM Vacuum 14x6 Ingersoll
368 CFM 100 psi 12x10 Ingersoll ER1
434 CFM Vacuum 14x7 Worthington HB
464 CFM 100 psi 12x11 Gardner RX
478 CFM 100 psi 11¼-7x7 Worthington YB2
640 CFM 100 psi 16-10x10 PennsylvaniaDE2
686 CFM 100 psi 15-9¼x12 Ingersoll XRB

LIKE NEW
1665 CFM 40 psi 175 HP—3-60-550 V Ing. Rand XRE 16-16 x 12

American Air Compressor Corp.
Dell & Tex Streets — North Bergen, N. J.

FOR SALE

10 Foster #102 Winders—100 Spindles
7" Traverse Wood Tubes $2500 Each

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Tel. OSborne 4-5766

BIALEK'S BEST BUYS

107—Draper XD, 50", 1949, equipped
8—Sipp skein to cone winders 1949-1950; 3-5 lb. package
7—Foster #76 single-end thread sizers
12—Atwood "5B"
4—8 fly reelers
64—Universal #50 cone winders
35—Foster cone winders
All winders with pineapple attachment. emulsion troughs
54—Atwood ½ lb. uptwisters

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PATERSON, N. J.
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3M—Heddle Frames 80" x 14" Hedd.
200—Electrodes KA 80".
400—Shuttles, new, 16½ x 2 x 1-9/16".
500—Mass. Stl. Beam Hds. 24".
75—Fibre Fill. Boxes, 19 x 13 x 7.
1M—Jack Spools 32½" x 10" Hd.
250—A. L. Bobbins, 8-¾".
2M—Marquette Spndls. (new) Mod. A, wool frs.
1M—Roving Cans 14½ x 42".
10M—Foster Wood Cones.

—L. J.—
McCAFFREY
& SON, INC.
Box 495 *Phone Pawtucket 3-1314* Pawt, R. I.

FOR SALE!

1—Barber-Colman Model 4E Stationary Tying-In Machine
2—Barber-Colman Model LS Portable Tying-In Machines
2—Elliott & Hall 50" Cloth Folders, 1 yard folds
1—Curtis & Marble 68" Cloth Silk Type Folder
2—Stainless Steel Williams Units, 50" Wide
1—Smith-Drum 4-Port Dye Package Dryer, Age 1951
2—Baines (English) 12 Station Automatic Thread Spoolers

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used and rebuilt
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SEND US OLD PLATE FOR QUOTATION
PUT YOUR PIN TENTERS IN TIP-TOP CONDITION
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All Diameters Any Length
SOUTHERN TEXTILE WORKS
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LATE TYPE WEAVING, NARROW FABRIC, THROWING & FINISHING MACHINERY

12—1947 C & K TAPE LOOMS
Heavy duty chain heads. 30 space battens, pick clocks, motorized.

4—1951 STAINLESS STEEL HUSSONG DYEING MACHINES
6000 lb. Capacity
Complete with hoist pumps and motors.

1—1953 STAINLESS STEEL HUSSONG DYEING MACHINE
100 lb. Capacity
Complete with hoist pump and motor.

1—1952 KAULDER WELDON STAINLESS STEEL DYEING MACHINE
Complete with controls and motorization.

1—STAINLESS STEEL DYE TANK
16'6" long, 2'6" wide, 18" deep.

2—1954 GLODDIE QUILLING MACHINES
Gear driven. Complete with motorization and auxiliary equipment.

1—1949 GLODDIE QUILLING MACHINE
Belt driven. Complete with motorization and auxiliary equipment.

15 SPINDLES WHITIN SCHWEITER AUTOMATIC QUILLER
1945 Model. Small box.

42—SPINDLE FOSTER NYLON CONERS
Rebuilt—Like-new Condition

REELERS
2—FIDELITY, 6 positions, 1 each for 44"-54" skeins, motorized
1—FIDELITY, 8 positions each for 54"-72" skeins, motorized
1—FLETCHER, 8 fly, 80 positions, motorized
1—SCRANTON, 8 fly, 80 positions, motorized
4—ATWOOD, 4 fly and 2 fly, motorized

1—1948 TOLLHURST STAINLESS STEEL MODERN 48" EXTRACTOR

1—FOSTER TENSIOMATIC WINDING MACHINE
10 spindles individually motorized, complete with controls.

64—U. S. TEXTILE 1950 & 1951 FACE DRIVE HEADLESS PKG. D.D. TWISTERS
8" gauge, 160 spindles per machine. Complete with separators, 2 motors per machine. 440V, 3 phase, 60 cycle. Magnetic starters. Complete with nylon-type bobbins and all accessory equipment.

50—LATE-TYPE NYLON CONERS
Stainless steel emulsion rolls and troughs. Pineapple attachments, L-drive, gear gain. Motorized in units of 12 spindles.

1—200 LB. STAINLESS STEEL SMITH DRUM ROTARY DYE MACHINE

1—300 LB. STAINLESS STEEL SMITH DRUM ROTARY DYE MACHINE

1—HI-SPEED 84" SIPP-EASTWOOD 8 YD. WARPER

1—800 END 1948 SIPP-EASTWOOD MAGAZINE CONE REEL

50—½ LB. ATWOOD D.D. UPTWISTERS

1—HERMAS SHEARING MACHINE
Complete with rolling and sewing attachments.

3—100 SPINDLE 2 LB. #10 ATWOOD DOUBLER TWISTERS
1947 Model. Motorized.

40—UNIVERSAL #250 SIZING MACHINES
Machinery in like-new condition. Complete with viscometers, stainless steel piping, sizing tubes and trucks.

1—HI-SPEED FLETCHER 1954 LARGE PKG. SPINDLELESS REDRAW
Sample Machine—18 Spindles

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THROUGHOUT THE WORLD!
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FLETCHER UP-TWISTERS
1952 Model King Spool package. Heavy duty Marquette Spindles. 8 inch spacing. 180 spindles per machine. Built in heat twist setting unit.

FS-2248, Textile World
Class Adv. Div. P.O. Box 12, N. Y. 36, N. Y.

Textile Machinery FOR SALE—

1—Smith Drum Cascade Skein Dyeing Machine, S.S., 3 arm-7 arm combination. Complete with S.S. overhead hood—exhaust fan and piping, M.D.
1—Tolhurst 40" Extractor, S.S. basket and cover. Automatic timing device, M.D.
1—Fidelity Skein Reel, Single Spider, adjustable up to 72".
1—Sargent 9 spindle Balling Machine, 11" Gauge—Year 1945.
1—#101 Foster 100 Spindle Winder, Nu Taper Coning, M.D.

STANDARD MILL SUPPLY CO.
31 ESTEN AVE. PAWTUCKET, R. I.

LIQUIDATION SALE

26—DYE JIGGS, 50", 56", 60", 70" widths, enclosed, and open, tensionless, automatic, and conventional types.

1—PADDER, 2—66" rubber rolls 18" dia., ball bearing, pneumatic 10 ton pressure.

4—PADDERS, 50"-60" widths, 2 rubber rolls, ball bearing.

1—SKEIN DYEING MACHINE, 3 arm stainless steel.

1—EXTRACTOR, 30" stainless steel basket.

6—ROPE SQUEEZERS, 2—24" x 18" dia. rolls.

4—TENTER FRAMES, 40'-60' long 60"-80" widths, stainless steel clips.

2—NASH VACUUM PUMPS, L-5 with motors.

1—PAD STEAM RANGE 66" wide. Padder, steamer, tensitrol washer.

12—DYE BECKS 12'-20' widths, enclosed and open, all stainless steel.

1—PIN TENTER, 90' x 72" with housing.

1—PIN TENTER, 60' x 144" with housing.

1—CALENDER, 50", 3 roll ball bearing, static eliminator.

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Sherwood 2-6614 Cable: Texindus

FOR SALE

2—120 spindle, Model 102, Foster Cone Winders 3° 30' wind. Motor driven with motors.

1—D & F, 48", 12 bar mixing picker with automatic feed and blower. Motor driven. Year 1952.

1—James Hunter, 6' cone duster with automatic feed motor driven.

1—James Hunter, 26B fulling mill, motor driven with motor, equipped with stainless steel lining, traps and throat. Has 12 x 18 rubber rolls.

1—Foster, Model 57, doubler, 100 spindles. Motor driven.

1—D & F, Pinless dressing frame 92" complete with spool Stand neck reed, hack stand, beamer and compressor.

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PORTABLE WARP TYING MACHINES

1—Titan GK-5—110V A/C with 84" Frame, Bought May 1953
4—B/C Model LS, Serials high—2 Motor-driven, 2 Hand-driven
1—B/C Model LL, Serial #29, Rebuilt—Hand-driven
2—B/C Model K, Excellent, Inexpensive
2—B/C Model LC, Excellent, Serials high—Hand-driven

DRAPER LOOMS—Rayon—Cotton

150—Model X, 40" Cloth, Spring Tops, Sliding Bar Stop, Stafford Cutters—Excellent
60—Modified D, 42" Cloth, Dobby, Sliding Bar Stop, motorized
32—Modified D, 44" Cloth, Lacey Tops, Stafford Cutters, motorized
Loom Parts & Supplies of all Descriptions

54—Model E, 50" Cloth, Spring Tops, Electric Stop Motion, motorized
60—Model K, 42" Cloth, Lacey Tops, Electric Stop Motion, motorized
18—Model D, 48" Cloth, Roll Top, Electric Stop Motion, motrized
14—Model E, 48" Cloth, Spring Side Motion, Electric Stop Motion, motorized

AUXILIARY MACHINERY

3—Hermas Cloth Inspecting Machines—24" x 66" Table
4—Terrell Bobbin Strippers—2-Model L, 2-Model K
2—Johnson Slashers—1-5 Drum, 1-9 Drum Stainless Steel 1950
2—Warpers—1 Cocker, 1 Sipp—and Creels Cotton System
1—Model DH Scott Tester, motorized
4000—Loom Motors, ½, ¾, 1 H.P., 220 & 550V

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Good Cotton Machinery

12—Whitin-Providence 9 x 4½ roving frames, 7 in. gauge, 108 spindles each. Whitin interdraft, individually motor driven.
6—Whitin-Providence 9 x 4½ roving frames, 7 in. gauge, 114 spindles each. H&B four-roll long draft. Individually motor driven.
48—Deliveries Saco-Lowell drawing, 4—delivery frames. Cushion top rolls, 8 ends up. Completely rebuilt by Saco-Lowell in 1946.
24—Deliveries Saco-Lowell drawing, 4—delivery frames. Metallic rolls, 8 ends up. Completely rebuilt by Ideal in 1953.
100—H&B 40 in. cards, 26 in doffers 12 in coilers. Ashworth #9 metallic clothing on cylinders and doffers. Excellent condition.

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(Continued on opposite page)

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Wanted: Weave Department Overseer for large pile fabric weave room. Please write letter giving in detail previous experience. Salary open. Address inquiry to P-2092, Textile World.

Colloid chemist able to lead production and development of non-woven fabrics (chemical and physical bonding of textile fibers) wanted. Unusual life opportunity for qualified person. P-2384, Textile World.

Textile Chemist. We are a progressive and expanding company located in the United States with a Canadian Subsidiary. Our plans include the establishment of laboratory facilities in Montreal to serve the textile industry, primarily in the Province of Quebec, on a wide range of textile products. We require a graduate chemist with plant experience in printing and finishing, who is capable of handling technical problems, both in the laboratory and field on specialties for sizing, printing and finishing of cotton and synthetic fibres. Some development work may be required. Give details of education, experience and salary requirements. P-2418, Textile World.

Box dyer: must be experienced in dyeing of all types of synthetic fabric. State age, experience and references. P-2466, Textile World.

Chemist: to take charge of plant laboratory specializing in dyeing printing and finishing textile fabrics experience essential. State age, experience and referencs. P-2468, Textile World.

Finisher: must be experienced in finishing of all types of synthetic fabric. State age, experience and references. P-2471, Textile World.

POSITIONS WANTED

Finisher—39 yrs. old married, 18 yrs. experience on cottons, rayons, nylon lace & nets, nylon tulle, band lace & levers lace. Good reference, will travel anywhere. PW-2280, Textile World.

Technician, knitter, mechanic and machinist. Diversified experience on knitting machines. Inventive ability desires position as a production manager in new or established business. PW-2428, Textile World.

Supt. of weaving or overseer of weaving experience on all types of fiber drapes and C and K looms excellent reference. Will consider overseas position. PW-2459, Textile World.

Index to ADVERTISERS Keyed by PRODUCT

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A HELP TO YOU. This unique TEXTILE WORLD index, particularly if consulted for two or more consecutive issues, affords a valuable source of information on the latest products and services available to the textile industry. Its comprehensiveness is the result of the fact that TEXTILE WORLD, having the largest paid circulation and highest readership of any textile-mill magazine in the world, carries the largest volume of advertising.

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Alemite Div., Stewart-Warner Corp.	128	M
Allegheny Ludlum Steel Corp.	157	O
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American Felt Co.	65	L RT
American Moistening Co.	16	A
American Safety Razor Corp. Industrial Prods. Div.	151	R
American Viscose Corp.	60	P
Andrews & Goodrich, Inc.	58	E
Armco Steel Corp.	193	O
Armstrong Cork Co. (Cots)	14-15	T
Armstrong Cork Co. (Loom Supplies)	29	T
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Ashworth Bros. Inc.	22	T
Atkinson, Haserick & Co.	122	T
Atlantic Steel Co.	190	O
Aurora Pump Div., The New York Air Brake Co.	182	H
Bahnson Co.	18	A
Barber-Colman Co., Textile Div.	211	R
Beck Co., Charles	180	E
Bemis Bro. Bag Co.	8	P
Booth Co., Benjamin	164	T
Branson Co.	49	G
Bristol Co.	34	K
Buffalo Forge Co.	24	A
Caldwell Co., Inc., W. E.	218	B E
Carbide & Carbon Chem. Co., Div. of Union Carbide & Carbon Corp.	172	C
Celanese Corp. of America Yarn Div.	56, 195	G
Century Electric Co.	28	F Q
Cities Service Oil Co.	139	M
Cleaver-Brooks Co., Boiler Div.	137	Q

TECHNICAL SUPERVISOR for COTTON FINISHING PLANT

To take charge of all technical development work for medium-size cotton finishing plant specializing in industrial finishes. Emphasis will be on product development, primarily the improvement of technical finishes such as abrasive cloth, sign cloth, filter cloth, etc. Will be responsible for carrying through projects from laboratory to successful commercial runs. Degree required. Unique opportunity to make large contribution and be rewarded accordingly. Progressive and expanding company located in Central States. Send resume outlining experience, education, personal data, present earnings. Please state salary requirements. All replies held in confidence.

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TEXTILE ENGINEER fabric development specialist, graduate technologist, can take full charge designing, constructing and weaving, proven records of fabric successes in dress and upholstery field, 16 years mill experience in dobby and jacquard, all fibers. Presently employed. Minimum compensation requested $10,000.—per year plus bonus arrangement.

PW-2426, Textile World
Class Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

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Young, multi-plant background. Looking for a challenging position with aggressive organization. Thorough knowledge of field from raw fabric to finished garment. Completely familiar with both woven and tricot operation. Ability to plan and supervise all stages of manufacturing in direct co-ordination with sales. Will relocate.

PW-2455, Textile World
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OVERSEERS FOR—finish. fancy and piece dye wstds.; dyeing wool jersey cloth; wstd. card. and comb.; shoddy and waste pick.; raw stock dye.; wstd. spin. and draw.; cot. weav. denims Draper looms; dye. pile fabrics; wln. card.; wln. frame and mule spin.

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Synthetic fiber experience desirable for Textile Engineers to assist with process and supervisory problems in manufacture of nylon.

Industrial Engineers with textile experience or Textile graduate with Industrial Engineering experience for Production Department planning.

Permanent positions offering excellent future in new Nylon project. Complete benefit plans, excellent working conditions, and new opportunity. Plant location is one mile north of Hopewell, off State Route 10.

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P-2302, Textile World
Class. Adv. Div. P.O. Box 12, N.Y. 36, N.Y.

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America's leading manufacturer of Textile Machinery has openings for men having sales experience plus 4 to 5 years experience in either the operation or design of textile finishing mills. Knowledge of drying equipment used in finishing operations essential. College background desirable. Send complete resume to

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7th Street & Tabor Road Philadelphia 20, Pa.

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from your
SPINNING FRAMES
and **ROVING FRAMES**

DO IT QUICKLY, ECONOMICALLY

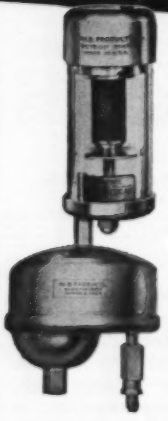
with the Amazing

M-B AMOSKEAG PNEUMATIC ROLL PICKER

MODEL A-VT-A

A pneumatic tool especially designed for the specific purpose of REMOVING LINT and FLY from the top rolls of Spinning Frames and Roving Frames. Saves time and does a better job by substituting mechanical cleaning instead of laborious hand methods. Air deflector prevents fly and lint being blown into yarn when spinning. Adjustable valve permits any desired spindle speed.

KEEP YOUR AIR LINES FREE of
WATER·DIRT *and* **SLUDGE**
•
KEEP AIR DRY AT ALL TIMES
USE THIS AMAZING COMBINATION
AND GUARD YOUR PNEUMATIC SYSTEM
•



M-B AUTOMATIC WHIRL-A-WAY AIR LINE FILTER
MODEL W-1

RIBBON TYPE FILTERING UNIT removes solids .00039 and larger. Transparent plastic bowl makes filtered foreign matter visible. Gives maximum protection to all types of Lint Blowers, Blow-off Hoses and various air-operated controls.

M-B AUTOMATIC AIR TRAP

Ejects water automatically. Operates upon accumulation of 3 to 4 ounces. Discharges in less than 5 seconds. Assures dry air in pneumatic system at all times. Non-corrosive throughout. Weighs less than 5 pounds.

WRITE FOR LITERATURE

M-B PRODUCTS
46 VICTOR AVE., Div. 16
DETROIT 3, MICHIGAN

Cleveland Tramrail Div., The Cleveland Crane & Eng'g. Co.	124	P
Cole Mfg. Co., R. D.	178	B, E
Collins Bros. Mach. Co.	186	T
Continental Can Co., Shellmar-Betner Flexible Pkg'g. Div.	191	P
Continental Diamond Fibre Div., The Budd Co., Inc.	198	O
Corn Products Refining Co.	158	C
Corning Glass Works	173	H
Crane Co.	50	H
Crompton & Knowles Loom Works	13	R
Crompton-Richmond Co., Inc.	208	N
Crucible Steel Co.	169	O
Custom Scientific Instruments Inc.	216	K
Dary Ring Traveler Co.	192	T
Davis & Furber Mach. Co.	170	T
Dayton Rubber Co., The Holfast Div.	177	E
Textile Div.	30-31	RT
Deutscher, Spinnereimaschinenbau, Ingolstadt	21	T
Diehl Mfg. Co.	37	F, Q
Dobeckmun Co., The	64	G
Dodenhoff Co., Inc., W. D.	180	R
Dodge Mfg. Corp.	215	Q
Dow Chemical Co.	207, 217	C
Draper Corporation	1	R
Dronsfield Bros. Ltd.	231	T
duPont deNemours & Co., E. I. Dyes & Chem. Div.	133	C
Eastern Gas & Fuel Assoc.	181	N
Eaton Mfg. Co., Dynamatic Div.	12	Q
Electrofilm, Inc.	196	M
Engineered Plastics, Inc.	212	T
Fairbanks, Morse & Co.	178	K
Fairtex Corp.	49	G
Fidelity Mach. Co., Inc.	23	L, T
Foster Machine Co.	131	T
Foxboro Co., The	44	K
Franklin Process Co.	141	G
Gardner-Denver Co.	42	H
Gastonia Textile Sheet Metal Works	232	T
Gaylord Container Corp.	142	P
Graton & Knight Co.	202	R
Guider Specialty Co.	200	F
Gulf Oil Corp.	20	M
Harshaw Chemical Co.	185	C
Haskell-Dawes Mach. Co., Inc.	184	T
Hayes Industries, Inc.	26	R
Hermas Machine Co.	174	E
Herr Mfg. Co., Inc.	219	T
Hubinger Co., The	199	C
Hungerford & Terry, Inc.	210	B
Hunter Machine Co., James	45	E
Huyck & Sons, F. C. Noone Ind. Fabrics Div.	210	E
Industrial Dryer Corp.	209	T
Industrial Rayon Corp.	46-47	G
Intercontinental Dynamics Corp.	194	K

Jacquard Knitting Mach. Co., Inc..	2	L
Jenkins Bros.	55	H
Johnson Corp., The	206	H
Johnson Bronze Co.	214	O...Q
Keever Starch Co.	155	C
Kuljian Corp., The	220	N
Laurel Soap Mfg. Co., Inc.	187	C
Lazenby Co., The F. A.	204	T
Lewellen Mfg. Co.	182	Q
Link-Belt Co.	7	Q
Loper Co., Ralph E.	218	N
Main, Inc., Chas. T.	218	N
M-B Products Co.	230	H
McBride, Ed. J.	6	R
Metallizing Engineering Co., Inc.	206	O...Q
Micro Switch, Div. of Minneapolis-Honeywell Reg. Co..	183	F
Minneapolis-Honeywell Reg. Co. Industrial Div.	63	K
Micro Switch Div.	183	F
Montgomery Co., The	218	G
Morton Salt Co.	165	C
Mount Hope Machinery Co.	171	E
Muller, Franz	27	E
Multi-Tex Prods. Corp.	61	G
National Aniline Div., Allied Chem. & Dye Corp.	25	C
New Departure Div. of General Motors Corp.	11	O...Q
Noone Industrial Fabrics Div. F. C. Huyck & Sons	210	E
Oakite Products, Inc.	214	C
Ordnance Gauge Co.	186	L
Penick & Ford, Ltd., Inc.	176	C
Platt Bros. Sales Ltd.	122	T
Pneumafil Corp.	144	T
Proctor & Schwartz, Inc.	66	E
Reeves Division Reliance Elec. & Eng'g. Co.	161	Q
Remington Rand, Div. of Sperry Rand Corp.	43	N
Republic Steel Corp.	32-33	O
Rhoads & Sons, J. E.	5	R
Ridge Tool Co.	187	H
Riggs & Lombard, Inc.	36	E...H
Robbins & Myers, Inc.	213	H
Robert & Co. Associates	2nd Cover	N
Roberts Co.	9	T
Rohm & Haas Co.	147	C
Ruppright's Rotary Roof Cooler	220	N
Ryerson & Son Inc., J. T.	174	O

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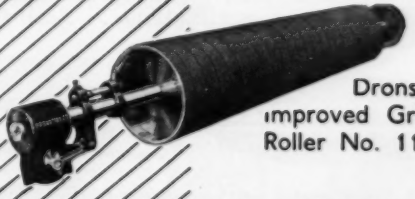
CARD GRINDING WITH ABSOLUTE ACCURACY

DRONSFIELD'S PATENT MOTOR-DRIVEN FLAT SURFACE GRINDING MACHINE No. 241.

Designed for grinding revolving flats—four simultaneously—dismounted from the cards. Absolute precision in setting is the aim.

Dronsfield's Patent-Traverse Wheel Grinder, No. 120.—*if requested can be supplied fitted with ball bearings.*



Dronsfield's improved Grinding Roller No. 112.

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A sheet metal works serving textile mills

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Standard type rib or perforated—cut and assembled on special precision-built jigs.

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Dynamically balanced for better performance—reduce vibration to an absolute minimum.

ASPIRATORS
Precision manufacturing methods assure proper shape and balance of Aspirators and Aspirator Dampers.

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WASTE CHUTE COVERS
WASTE CHUTES
SLIVER PANS
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Top Combs, Half Laps and Winder Guide Combs precision-rebuilt of top quality materials to manufacturer's standard specifications. Imported English needles of tempered high-tensile steel used exclusively.

Saco-Lowell Shops	48, 126	T
Sandoz Chem. Wks., Inc.	53	C
Sargent's Sons Corp., C. G.	168	F
Scharer Tex. Mach. Wks.	54	T
Scherr Co., Inc., George	220	F
Schragg Ltd., Sydney & E.	52	T
Sheffield Corp.	212	K
Smith, Drum & Co.	179	F
Socony Mobil Oil Co., Inc.	57	M
Solvay Process Div., Allied Chem. & Dye Corp.	167	C
Socono Products Co.	17	F T
Staley Mfg. Co., A. E.	203	C
Stauffer Chem. Co.	149	C
Stephens-Adamson Mfg. Co.	175	O Q
Stowe-Woodward, Inc.	135	F
Supreme Knitting Mach. Co., Inc.	205	I
Tennant Co., G. H.	166	D
Textile Hall Corp.	184	N
Textile Machine Works	68	L
Textile Recorder Machry. & Accessories Exhibitions Ltd.	221	N
Toledo Scale Co.	10	K
Tompkins Bros. Co.	176	L
orrington Co., The (Bearings)	201	O Q
Trane Co.	40-41	A
Turbo Machine Co.	70	T
Unionmatex, Textilmaschinen-Union G. M. B. H.	19	E
U S Bobbin & Shuttle Co.	59	RT
U. S. Rubber Co. Mechanical Goods Div.	163	Q
Universal Winding Co.	62	T
Veeder-Root, Inc.	4th Cover	K
Warner & Swasey Co.	51	T
Westinghouse Electric Corp. Lamp Div.	188-189	F
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The Sign of
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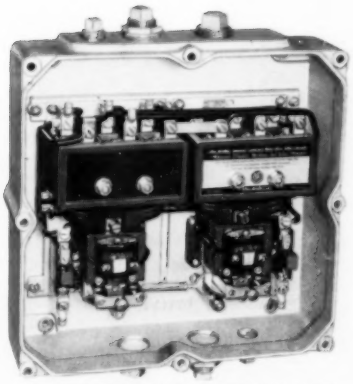
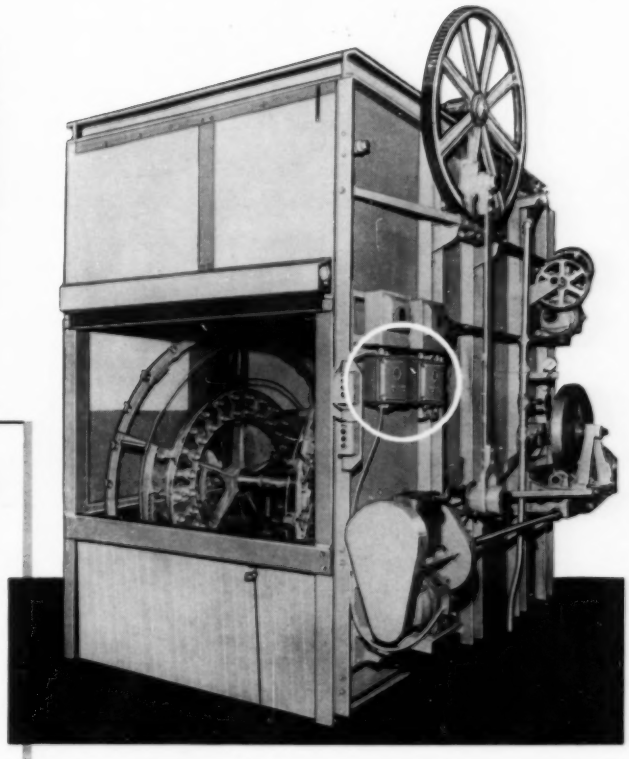
Motor Control



A-B watertight reversing starter with cover removed to show Forward and Reverse starters.



Use ALLEN-BRADLEY WATERTIGHT STARTERS on all WET PROCESSING MACHINES

● Since dyeing involves the use of much process water, electrical equipment in dye houses ought to be watertight. That's why this Klauder Weldon Giles 25-stick, hoist-type, skein dyeing machine is equipped with Allen-Bradley Bulletin 705 reversing starters in Type 4 watertight enclosures.

A close-up of this reversing starter is shown above with cover removed. A rubber gasket makes a watertight seal when the cover is bolted down. Here is where the user obtains full advantages from Allen-Bradley solenoid control. With double break, silver alloy contacts which remain in perfect operating condition, inspection of contacts is not necessary. With only one moving part, trouble free mechanical operation is assured. You can install Allen-Bradley control and forget it. Send for A-B Handy Catalog.

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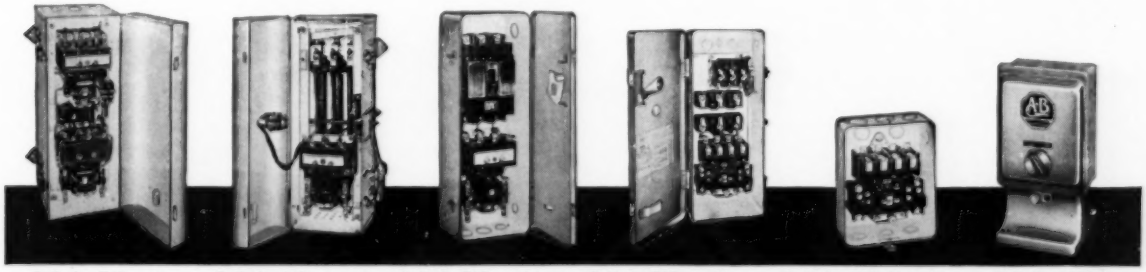

Bulletin 740 automatic velvet smooth motor starter.

Bulletin 640 manual stepless resistance motor starter.

Bulletin 713 combination starter with circuit breaker.

Bulletin 712 combination starter with fused, visible contact, disconnect switch.

Bulletin 709 Size 1 automatic across-the-line motor starter.

Bulletin 1209 manual loom switch—pedestal mounting.

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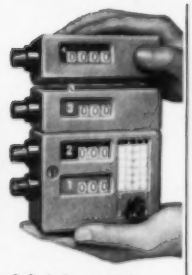
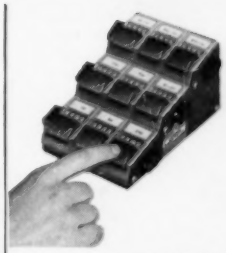


2-3-4 Convertible Counters for looms, frames, knitting machines, etc.

Loom Cut Meters for controlling uniform cuts of cloth.



Vary-Tally Multiple Unit Reset Counters for inventory, inspection, and 1,001 other hand-counting jobs.

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